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SECRETARY OF THE ASSOCIATION

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PHILOSOPHY AND THE SOCIAL SCIENCES

(Presidential Address)

THE distinguishing feature of modern American philosophy is tolerance. Men used to be much more intolerant of opposing philosophical opinions than they are today. Now a man can hold almost any belief without serious interference. It is even hard to arouse opposition to those who in word and deed take up arms against the American government, against its institutions and the law and order which are its foundation. Criminal and communist alike receive the acquiescence of almost complete silence and indifference. America is growing tender, partly enervated by great wealth unwisely hoarded and partly dulled by poverty unwillingly endured.

Intolerance, at least in philosophical matters, would be far better, for it would bring with it disputation, which to philosophy is the very breath of life. I do not, of course, refer to an intolerance which would approve of violence, ostracism or a suspension of charity and courtesy as regards the person of the opposition. I refer entirely to an intolerance as regards untruth. The spirit underlying Aristotle's statement, "Not that I love Plato less, but that I love truth more," is the spirit which is lacking in our philosophy today.

The basis of this modern tolerance is despair. Men have come to the conclusion that truth is unattainable, and in their uncertainty of what calamities may be impending, they nervously preach a philosophy of optimism which in their hearts they do not feel. They make "toughmindedness" their motto, and "adventure" their theme song. But

in their craving for progress and change they exhibit the restlessness of Wanderlust, which is more a flight from reality than an honest joy of living. They have not even the recklessness of the pagan suggestion to "eat, drink and be merry, for tomorrow we die." Their recklessness is hampered by a lesson which Christianity taught them, the lesson implicit in the commandment, "Love thy neighbor as thyself." Christian in tradition, though not in reason, they still feel a responsibility for the human race. Like ancient Atlas, they would prefer to take the world off their shoulders, but they know not how, and thus they present a modern repetition of the ancient anomaly of a man strong enough to lift the world but not strong enough to set it down or let it fall. They still speak about a "melioristic universe," a "fellowship of men" and "social progress" without any basis in reason for their interest except the feeling of exhilaration at having kept, Boy Scout-like, their record of a good deed each day unbroken. In this spirit Walter Lippmann[1] suggests that men continue to strive and to obey the precepts of ethics which they have no reason to believe are true. He calls his philosophy "the religion of the spirit." He says:

> In an age when custom is dissolved and authority is broken, the religion of the spirit is not merely a possible way of life. In principle it is the only way which transcends the difficulties. It alone is perfectly neutral about the constitution of the universe, in that it has no expectation that the universe will justify naïve desire. Therefore, the progress of science cannot upset it. Its indifference to what the facts may be is indeed the very spirit of scientific inquiry.

Bertrand Russell[2] has succeeded especially well in forcibly picturing the situation. In a paragraph in which he speaks of what he calls "the beauty of the tragedy of life," he says:

> We see, surrounding the narrow raft illumined by the

[1] *A Preface to Morals* (New York: Macmillan, 1931), p. 327.

[2] *Mysticism and Logic* (London: Longmans, Green & Co., 1921), p. 54.

> flickering light of human comradeship, the dark ocean on whose rolling waves we toss for a brief hour; from the great night without, a chill blast breaks in upon our refuge; all the loneliness of humanity amid hostile forces is concentrated upon the individual soul, which must struggle alone, with what of courage it can command, against the whole weight of a universe that cares nothing for its hopes and fears.

The causes of this dreary outlook on life are not hard to find. There are at least two dominant ones, both of which we shall consider briefly. The first has been traced back to the sixteenth century. It has been called by so many different names that at present it had better be left unnamed. Basically it is subjectivistic. It might at first be considered as springing from ancient Greek sources, were it not that it is a type of subjectivism entirely foreign to the Greek mind. The Stoics and the Sophists, though they spoke as if they were subjectivists, actually did not deny the reality of the material universe. The Neo-Platonists, with all their emphasis upon the emanation of multiplicity from unity, spoke in terms of things and not of mental states. Subjectivism in the modern sense is uniquely modern. Its first prominent expositor was Berkeley, who, it seems, applied the religious formula of private interpretation to the field of reality, thereby producing a purely subjective metaphysics which is saved from solipsism only by the religious need of admitting the existence of God. In the hands of Kant and Hegel, who made the idea of the good also subjective, it was carried to systematic heights which were surpassed only by the invectives which William James saw fit to heap upon them in his scathing denunciation of absolute idealism.

It is noteworthy that both Kant and James vehemently denied that they were idealists, and that each in turn brought idealism one step nearer its logical outcome. James, in particular, should have known better. He criticised the Hegelians for the subjective smugness with which they philosophized, and then proceeded to develop a more flexible

smugness of his own. The real difference is that James admitted the pragmatic truth of several ways of thinking other than his own. Royce's system in a sense was true—for Royce. The highly theistic philosophies were true, too, for those people who were not sufficiently toughminded to step boldly into a world with only a finite, puny God. In recent years philosophers bolder than James have made for themselves a world with no God at all, and it is presumed that they, too, have truth. There is no longer unity to truth. One may speak of having truth, but not *the* truth. Truth for a man is what he thinks it is. No man can know *the* truth. Edwin Arlington Robinson, in answer to a letter of Will Durant, somewhat humorously, but no less seriously, remarked:[3]

> You say, or imply, in your letter that the truth has been discovered . . . This is naturally a cause of some chagrin and humiliation for me, for I had heard nothing about it. It is true that we have acquired a great deal of material knowledge in recent years, but so far as knowledge of the truth itself is concerned, I cannot see that we are any nearer to it now than our less imaginative ancestors were when they cracked each others' skulls with stone hatchets.

Idealism thus successively deprived the universe of being, of the good, of God and of truth, and in corresponding sequence placed all four within the individual human mind. Subscription at the same time to Hume's denial of substance and causality leaves the present-day idealist with very little about which to philosophize, not to mention the added difficulty of having no substantial mind with which to philosophize.

Regardless of the numerous aliases under which it operates, subjective idealism is the dominant American philosophy. Neo-realists may speak in terms of "neutral stuff," critical realists in terms of "events," pragmatists in terms

[3] Will Durant, *On the Meaning of Life* (New York: Ray Long & Richard R. Smith, Inc., 1932), p. 48.

of "results," humanists in terms of "values," but in the last analysis they support the same philosophy. The knowledge which has been gathered is at best only tentative. Certain successions of occurrences have been noted. These may change at almost any time, for they are unconnected occurrences in an infinite series. Both individually and in the order of their appearance they "just happened."

This analysis and interpretation which have just been given of the first of the two dominant trends of present-day philosophy are remarkably easy to reconcile with the second which we, in accord with the prevailing custom, shall call science. In fact, science and idealism are so nicely parallel that something more than an accidental agreement seems to be indicated. The scientist necessarily deals with single observable phenomena. As far as he is concerned they are the only source of truth. They are his premises. He calls them "data," *i. e.*, "the given." From them he derives certain uniform patterns of behavior, certain sequences of events, which he calls laws. Laws are statements of what actually happens. They are the results of observation, and are the goal of science.

In following this procedure the scientist tries to be objective. By objectivity he means, not so much a positive dealing with real objects, as an avoidance of causes of error such as Roger Bacon lists in the first book of his *Opus Majus* and Francis Bacon includes in his description of the idols which the mediocre scientist is said to worship. Among these are prejudice, reliance on unworthy authority, traditional beliefs and anything else which would influence observation. Scientific objectivity is, therefore, in no sense the antithesis of subjective idealism. On the contrary, the two seem to have the same aim. Both wish to make the observations as pure a series of observations as possible. Both are interested in the observations as such. Quite easily, then, an interest in the observations can and often does lead to the

assumption that the observations themselves are alone the true reality, for how can men know anything except what has been observed?

Not all scientists would support this last proposition. Some are realists in the old, Aristotelian sense of the word. Others are too busy with their research to bother about the philosophical aspects of science. Some, however, when they speak of the tentativeness of scientific laws are thinking only of the incalculable investigations which must still be made. The day when all their work is finished is so far in the hazy future that they question whether men will ever attain truth. They wonder, too, where it will be found. They have spent a lifetime making themselves plastic and ready to go wherever their research leads. They have no presuppositions as to what the truth is, and they cannot quite tolerate the boldness and conceit with which philosophers try to point it out to them. If scientists cannot be sure, how can philosophers, who have not half the rich background of observation from which to speak? Philosophers, they conclude, are presumptuous; and metaphysics is unworthy of the name of knowledge. The attitude of mind which they thus develop leads to a rejection of all philosophy, even of idealism which seems to have so much in common with the scientific way of thinking. In a recent collection of essays published under the title, *Philosophy and Contemporary Science*,[4] the following statement occurs:

> The philosopher will always be called on to make efforts at synthesis because the generality of his studies marks him out as the obvious person to attempt the impossible. That is what the philosopher is for. And I see no reason why he should not do so, provided that he remembers . . . that in going 'beyond science' he is exercising his prophetic rather than his purely philosophical powers.

The achievements of scientists in the fields of physics,

[4] Planned and arranged by Sir J. Arthur Thomson (New York: Harper & Bros., 1934), p. 392.

chemistry and biology were so startling as to focus the attention of the whole world upon their work, and to inspire the less fortunate social theorists to imitation. Comte (1798-1857) was the guide of the new movement. He stressed the gathering of sociological and economic facts. His method became so popular that today there is as much or even more interest in social facts than there is in the facts of the physical and biological sciences. The social sciences have been made "scientific" in every way. Roscoe Pound and many others refer to law as "social engineering."[5] John Dewey compares education to bridge building, and calls the teacher an "investigator."[6] But what started out as a comparison gradually tended to lose its analogical form and to take on the characteristics of univocity. The social sciences, because they are like the natural sciences in many respects, came to be viewed as like them in almost all respects. The scientific method became "fruitful;" its applications to other fields multiplied so astonishingly that many men, forgivably, still believe it is the only method than can discover truth.

If our analysis up to this point is correct, the gloomy outlook of contemporary American philosophy is traceable to the dissatisfaction with philosophy which many scientists express, and to the failure of idealism to do anything more than echo a belief in the ultimate victory of the scientific method, thereby leaving men with the highly unsatisfactory prospect of striving hard so that some future generation may perhaps enjoy a more generous store of truth than men now living can expect to find.[7] The scientists, it seems,

[5] Roscoe Pound, *Interpretations of Legal History* (New York: Macmillan, 1923), pp. 141, 156.

[6] *The Sources of a Science of Education* (New York: Horace Liveright, 1929), pp. 34, 46.

[7] Alfred North Whitehead, *Science and the Modern World* (Cambridge University Press, 1926), p. 291: "Modern science has imposed on humanity the necessity for wandering. Its progressive thought

have the better of the idealists, for with modern philosophy bankrupt, and with the popular belief that no older philosophy can surpass the modern, they have nothing else to which to turn. They are unintentionally aided and abetted in their views by exaggerations such as Ralph Barton Perry makes in one of his lectures.[8] Having signified his lack of sympathy with mediæval philosophy, he says:

> "But in the last three centuries, philosophy, especially English and French philosophy, has become more free in form, more imaginative, and more self-expressive."

Not one of these characteristics would appeal to a scientist or for that matter to any earnest searcher after truth. Scientists are, therefore, partially correct in relying entirely upon their own methods.

The point to note particularly is that scientists did not begin with a prejudice toward philosophy. Their opposition was developed by experience with the subject in its ultra-modern form. With Comte they concluded that there were three stages of progress in the search for truth: the theological, the metaphysical and the scientific, and that the greatest and latest of these is the scientific. Not knowing the older and more reliable traditions in philosophy, they forsook philosophy for science, even though they realized the insufficiency of science.

That the particular facts of science are in themselves unsatisfactory and incomplete is demonstrable from the method and purpose of science. The great aim of science is to go as far as possible in the formulation of general laws, but these laws must be derived from individual instances. As

and its progressive technology make the transition through time, from generation to generation, a true migration into uncharted seas of adventure. The very benefit of wandering is that it is dangerous and needs skill to avert evils. We must expect, therefore, that the future will disclose dangers. It is the business of the future to be dangerous; and it is among the merits of science that it equips the future for its duties."

[8] William A. Neilson (editor), *Lectures on the Harvard Classics* (New York: P. F. Collier & Son Co., 1914), p. 129.

long as the facts and laws are in the fields of the physical and biological sciences there is no difficulty, for the phenomena are observable to the senses, and the laws are statements of what actually *does* happen. But the facts and laws of the social sciences—of education, economics, sociology, political science and law—are quite different. For some reason or other a social law involves duty and ideals; it states what *ought* to happen. Social facts are not immediately generalized into laws. Such generalization would not be sufficient, for only the historical fact of past behavior and of possible future behavior would result. The concept of behavior, when applied to human beings, is misleading if it is defined in terms of the behavior of molecules or physical forces or the automatic actions of organisms. Human social behavior is not automatic, but the activity of beings capable of self-direction according to a prearranged plan of their own acceptance or conception. It is not enough to know that some men *do* murder. The social law states that men *should not* murder. The moral maxim is not a generalization of the "*mores*" or customs. It is a result of reasoning to the intrinsic wrongness of murder. Roscoe Pound at least partially admits this distinction in his *Law and Morals*.[9] He says:

> When the analytical jurist analyzes the precepts and doctrines and institutions of developed law and, in the apt language of Mr. Justice Holmes, washes the results 'in cynical acid,' and thus finds fundamental legal conceptions of right and duty and power and liberty or privilege devoid of any moral content, he much deceives himself.

The injection of the concept of duty into social science is the crux of the whole line of reasoning which we have been following. The presence of the discretionary calls for discretion, and discretion in social affairs requires an outlook on life. Even William James admits this. He begins his

[9] Chapel Hill, N. C.: University of North Carolina Press, 1924, p. 34.

Pragmatism[10] by quoting with approval a statement from Chesterton's *Heretics:*

> "There are," says Chesterton, "some people—and I am one of them—who think that the most practical and important thing about a man is still his view of the universe. We think that for a landlady considering a lodger it is important to know his income, but still more important to know his philosophy. We think that for a general about to fight an enemy it is important to know the enemy's numbers, but still more important to know the enemy's philosophy. We think the question is not whether the theory of the cosmos affects matters, but whether in the long run anything else affects them."

Robert Millikan has a more explicit statement in his *Science and Life.*[11] After pointing out that "science is an objective study of the facts of nature" and as such "never commits itself as a matter of faith" to any of the hypotheses which it uses, "not even to evolution," he proposes that the only solution of our social problems is "the slow growth of a larger degree of *both public intelligence and public conscience than we now have. Intelligence enables one to know better what he ought to do, while conscience keeps him doing as he knows he ought.*"

Formerly the social sciences were classified under philosophy. The natural sciences were treated similarly. But a distinction which was always carefully adhered to in Greek philosophy placed the social sciences in the division of what was called practical philosophy, and the natural sciences in theoretical or speculative philosophy. The distinction has the advantage of stressing the intrinsic difference of method in the two divisions. St. Thomas Aquinas points out in his commentary on the *De Trinitate* of Boethius that speculative philosophy aims at knowledge or truth for its own sake, and practical philosophy aims at knowledge as directive of action.[12] He also states that it is a mis-

[10] London: Longmans, Green & Co., 1907, p. 3.
[11] Boston: The Pilgrim Press, 1924, pp. 77-8.
[12] Q. 5, a. 1 (Volume 3 of Mandonnet's edition of the *Opuscula*).

take to apply the methods of one science to other sciences. In the hierarchy of sciences the methods of the higher science are applicable to the lower, but the reverse is not true.[13] The older tradition is thus agreed that if the social sciences are to fulfil their mission in the direction of the various departments of human life, they must submit their scientific findings to the analysis and direction of philosophy. They must not rely upon the methods of the natural sciences, which, because they deal with facts of an entirely different nature and order, cannot be expected to proceed along the same lines as the social sciences. The social sciences, if they are to achieve their purpose, must cease to be merely sciences and must become in addition *applied* philosophies.

Modern thinkers have obscured the older tradition by emphasizing the way in which the social sciences have separated from philosophy. Their statements may be correct as regards the historical fact of the separation. But not everything that happens is good. In this instance the very point of pride has been the cause of downfall. The social sciences have become so supremely factual that practically every new fact discovered has seemed to necessitate a new interpretation of the entire field. Social scientists on the one hand have so dominated the intellectual horizon as practically to legislate out of existence those who, though perhaps not saturated with minute facts and methods, might have kept the social sciences on the philosophic foundations which is their inheritance and their principal requirement. Philosophers, on the other hand, instead of holding their ground in the intellectual arena have been overawed by the preeminence and pretensions of the social sciences. In some cases they have partially submitted by formulating new moralities (and even new religions!) to conform to the

[13] Q. 6, a. 2.

most recent dictates of incomplete and ill-digested facts; and in other cases they have capitulated unconditionally and have become slavish imitators of the methods of the dominant sciences. Eddington[14] speaks of this situation as "an overweening phase when it was almost necessary to ask the permission of physics to call one's soul one's own." More hopefully than correctly, he adds as his opinion that this phase is now past.

The inability of science to solve all human problems should not be considered derogatory to science. In the last analysis the method of science is only one of several ways by which men can attain truth. Science has its legitimate place, even with regard to philosophy. Without it, philosophy would degenerate into mere hair-splitting sophistry or formalism. With it philosophy tends to keep close to the very real world in which men live and to the very real problems which arise out of men's place in the world.

Granted that a harmony is possible between science and philosophy, it is still of vital importance to know what direction philosophy should take. For the social sciences the direction is especially important, since men are expected to live in accordance with their philosophy. St. Thomas says[15] that no one philosophizes except to find happiness. Modern philosophy has forfeited the right to be accepted as an interpreter and guide of human destiny. When the older mediæval philosophy failed, it did so because men no longer cared to practice it. Modern philosophy, however, has failed because of the very fact that it was practiced. By its own favorite pragmatic test it stands adjudged a failure. Three hundred years ago with high hope men started out on a new path, and now they have ended in despair.

[14] *The Nature of the Physical World* (New York: Macmillan, 1929), p. 344.

[15] Commentary on Boethius' *De Trinitate*, q. 5, a. 1.

"Up vistaed hopes they sped.
Then shot precipitated
Adown titanic glooms of chasmed fears."

The lesson of that experience should not be entirely in vain. Beatrice now might well take Vergil's place as guide to heaven.

JOHN O. RIEDL.

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A DECADE OF ASSOCIATION

(Annual Dinner Address.)

THE American Catholic Philosophical Association is completing a decade of service to the cause of Scholastic philosophy in the United States—ten years of accomplishments of no mean kind, an augury of greater and better things to come.

The American Catholic Philosophical Association was organized at a meeting held at The Catholic University of America on January 5, 1926, and this in response to a widespread demand that such Association be formed. In January, 1925, letters were sent to eight professors of philosophy, requesting their views on the feasibility of forming a philosophical society. In May of the same year, a circular letter was mailed to almost four hundred Catholic institutions, asking their opinion about the proposed Association. The responses were almost uniformly favorable, with the result that a tentative constitution for the new society was formulated and mailed to two hundred professors of philosophy for their suggestions and corrections. The organization meeting took place in Washington, in January, 1926.

The purpose of the American Catholic Philosophical Association is "to promote study and research in the field of philosophy, with special emphasis on Scholastic philosophy."

How well the organization has kept to this fundamental purpose is evident from a survey of its activities, particularly of the *Proceedings of the Annual Meetings* and of the articles which have appeared in its quarterly journal, *The New Scholasticism*. The *Proceedings* have been printed annually; *The New Scholasticism* appears every quarter. If the American Catholic Philosophical Association had done nothing more than publish these dignified and scholarly contributions to philosophical knowledge its existence would be justified.

The *Proceedings* carry the papers read at the Annual Meeting, together with an account of the discussions held. They form both a monument and a yard-stick of the vitality and productivity of Scholastic philosophy in the United States. *The New Scholasticism* has completed nine volumes of approximately four hundred pages each volume—a review which, because of its high scientific character, its urbanity, and its impartiality, has merited not only national but even international recognition for the Scholastic cause. We may recall, with a certain measure of pride, that *The New Scholasticism* is the only scientific review dedicated to the propagation and defense of Scholasticism published in the English-speaking world.

The annual meetings have been productive of great good. Papers of exceptional merit have been read; interest in philosophy has been aroused or sustained; members have become personally acquainted and made cognizant of the work of fellow-members in the field of philosophy. We all make sacrifices to attend the annual meeting. I, for one, consider them well worth while, if for no other reason than we return to our daily work stimulated to better things for the cause to which our lives are dedicated.

The American Catholic Philosophical Association has been conducted on a high scientific plane. It is an association of philosophers, of thinkers. We assume that our mem-

bership is well acquainted with the principles and history of philosophy. It is from that given point that we proceed to a discussion and solution of the problems which are presented. It is not the function of this Association to vulgarize philosophical truth. Vulgarization is a fine work; it is not ours. The primary objective of the American Catholic Philosophical Association is to "promote study and research." That end should never be forgotten nor permitted to grow hazy in our minds. The moment the American Catholic Philosophical Association turns into a popular, as distinct from a purely professional, organization, that moment its fate is sealed.

To labor this point may appear to be carrying coals to Newcastle; yet the temptation exists, and in some quarters is strong, to popularize, when our real purpose is to grow ever more deeply and profoundly in the spirit and knowledge of Scholastic truth. Let anybody who cares write *Outlines* of this and *Stories* of that; such work is not our task. We are philosophers, not apologists. From one point of view the best apology is a work whose scientific character is beyond reproach.

We have good and sound reasons to congratulate ourselves on the progress made during the last ten years. The American Catholic Philosophical Association as a learned society is well established; its *Proceedings* are respected; its journal, *The New Scholasticism*, has won a very definite place in the literature of the philosophical world. What of the future? May I be pardoned if I am bold enough to suggest some lines to which the *Association* may dedicate itself during the coming ten years?

The division of the work which might be done seems somewhat obvious. In the first place, Scholasticism is an historic doctrine. Secondly, it has contemporary significance. The *Association*, therefore, might devote its efforts to clarifying, promoting, and sustaining these two out-

comes. I need not tell you of the tremendous advances which are being made, year by year, in our knowledge of mediæval philosophy. The reason for this advance is simple—hundreds of scholars, soundly trained and using sound methods, are devoting their lives to clearing up and formulating correctly the history of mediæval Scholasticism. We, in the United States, should make our contribution to this ever-growing field. We can make it if our young men and women are willing to submit to the training and discipline necessary to produce scholars who will be at home in the joint fields of history and philosophy. In these, as in every field, scholarship will be the sole measure of our success. The Association might well promote such historical scholarship by founding fellowships, initiating and sponsoring a series of monographs, by encouraging high-class productions and assisting in their publication.

The second fundamental objective of the Association might be to give Scholastism a place as a living philosophy in the thought of contemporary America. At the present hour, American philosophy has reached some kind of depths —what they are will be for you to say. We shall, however, never succeed in making the new Scholasticism a vital factor in the thought and activity of the philosophers of the United States unless we begin by understanding and appreciating their point of view, their approach, and the conclusions they have arrived at. I think it somewhat exaggerated to say that American thinkers are anxious to learn the point of view of the new Scholasticism. On the other hand, they are not unfriendly to it. We can never make much progress along the road to a more general acceptance of Scholasticism until we are both willing and anxious to learn the standpoint of our adversaries.

Why American Scholastics should discuss and interpret philosophy in terms of a contemporary European system, whatever that system may be, is beyond me. European

Scholastics are seemingly very anxious to relate their thinking to the dominant systems of the country where they live —the Italians discussing critically the Italian; the French, French, and the Germans, German non-scholastic systems. The objective is evident— to cause their contemporaries to realize that Scholastics are truly interested in present-day thought and its welfare, and are not attempting merely to graft onto a modern body a mediæval limb, be it as vigorous as you please. There is no need to labor this point. It has been felt keenly by all of us since the very inception of the American Catholic Philosophical Association, and we have done something, at least, to rethink our principles in terms of contemporary American problems. Obviously, much more could be done. It is a task to which the American Catholic Philosophical Association might well dedicate itself in the coming quarter of a century. The day American philosophers begin to take us seriously as philosophers, that day the New Scholasticism has come of age in the United States.

May I add one word about the teaching of philosophy on the graduate level? The Holy See, as you know, is interested tremendously in graduate philosophy, and for evident reasons. Our universities can do a great deal to develop a sound knowledge of Scholasticism, as well as to encourage and protect its growth, if they are uncompromising in the acceptance and application of high standards of scholarship in this particular field. Philosophers are not born; they are trained. On the ideals and devotion to scholarship of the professors of philosophy of Catholic colleges and universities depends the success of the New Scholasticism in the United States. In other words, the life of the New Scholasticism is, to an extraordinary degree, in the hands of the membership of the American Catholic Philosophical Asso-

ciation, a trust they appreciate and a duty they will discharge faithfully to the greater glory of the truth which they have accepted and have sworn to defend.

JAMES H. RYAN,

Omaha, Nebraska.

THE CHURCH AND PHILOSOPHY

(Annual Dinner Address.)

THE divine command to teach all nations constitutes the charter of the Catholic Church, the greatest of all educational institutions. Every living creature fashioned to the image of God is to be a student in this school. All ages to the very consummation of the world are to be subject to its guidance. All knowledge transmitted by God to man and all knowledge painstakingly acquired by man himself form its curriculum. Every kind of human activity, whether individual or social, national or world-wide in scope, is to be motivated by its doctrine. All means whereby the principles and attitudes of men are formed are to be included in its teaching procedure.

The Church, from the first days of her existence, has been keenly conscious of the value of that mighty influence on belief and behavior—"Philosophy," the queen of sciences, the study of things through their causes, the integration of those causes into a coherent whole, the establishment of a universal view of reality that includes all things that man may know. The Christian Church has ever been a school of philosophy and her ministers have ever been philosophers.

Does not the whole world recognize this when it listens to the august head of the Church as he expounds the principles of morals, economics, sociology and education? Have we not witnessed only the other day the respect which our country paid to the voice of a great Prince of the Church

as he explained the ethics of birth control? Is not philosophy held in high honor in our *Seminaries* and *Universities?* Does not the candidate for Sacred Orders devote two or three years of his precious period of preparation to the almost exclusive reading of *philosophy?* Indeed, is not our course of *theology* largely devoted to questions which are purely philosophical? Does not every authorized teacher of the Church, from Sovereign Pontiff to the humblest parish priest, from the erudite professor of the *University* to the lowliest instructor of *Catechism,* continually draw upon the methods and reasoning of *philosophy?* Arguments drawn from the *Ratio Theologica* are to be found in every textbook of theology.

Philosophy has always been considered the *Ancilla Theologiæ,* a term which denotes not subservience but coöperation. And this protection of the Church has often rescued even as it has always dignified philosophy. When the Apostles launched into their great mission, the sublime truths of Plato had been deformed into weird and grotesque chimeras by mediocre men who had attempted to synthesize the elements of Greek and Oriental thought. But where the efforts of the ablest of them had only resulted in degrading the doctrines of Plato and in rendering unacceptable the religion of the Persians, or, as in the case of Philo, the religion of the Hebrews, St. Paul, enlightened by Christian knowledge, swept away the unworthy debris which disfigured the majestic structures of the best Greek thought and gave to future speculations such an orientation and impetus that there flowered for centuries a noble philosophy which contained the finest elements of Plato and the deepest elements of Christian theology. Without an Augustine, a Boethius, a Bernard—to mention only a few of the Christian thinkers who added to the glory of Greek thought —who would think of Plato except in terms of just another name in history?

The same service was performed for Aristotle by the two great luminaries of the thirteenth century. For a thousand years the massy thought of the Stagirite had been lost to the view of mankind. Revived by the Moors and Jews of Spain, his works were suffering the same fate as those of Plato under the hands of the Gnostics, when Albert and Thomas rescued the greatest thinker of antiquity from what promised to be eternal ignominy and oblivion. They caused to be prepared carefully edited texts, they corrected the doctrine of the Philosopher in the light of Christian revelation and in the light also of the knowledge which the world had acquired since the days of Greek antiquity, and made what were sheer dry bones a living organism which has ever since been a force in the world.

But the Church is more than a school of philosophy, for her doctrines transcend the sphere which contains merely philosophic knowledge. Philosophy as such deals only with the things of the natural world, whereas the Church deals also with the world of the supernatural. Philosophy can employ only human understanding, whereas the Church is guided also by divine understanding. The center of interest of philosophic speculation shifts from time to time—emphasis being laid now on one form of human activity and now on another, often, indeed, to the neglect or denial of fundamental truths; but the doctrine of the Church in its entirety remains the same and unchanged at all times—a pure light which shines over the troubled waters to call men back to the harbor of safety and truth. And, then, it may be remarked that philosophy, in the ordinary meaning of the term, is a pre-occupation for the extraordinary person, for one whose mind is of superior quality or speculative bent; whereas the doctrine of the Church has appeal and meaning for all classes and conditions of men, regardless of their state of social advancement or intellectual level.

Any system of philosophy is inadequate to embrace the

whole of that vast range of truth of which the Church is the custodian. Some men have, indeed, exaggerated this thought to the extent of denying that human reason is capable of dealing with real truth, with truth that has vital significance for man. They would discard philosophy altogether, or would fall into an apathetic scepticism. Against such the Church has always proceeded with inflexible severity and vindicated the fair fame of philosophy. The history of the Gnostics of the first three centuries, of the successive waves of ignorant mystics in the Middle Ages, of the Quietists in modern times, bear eloquent testimony to the concern of the Church for the queen of human sciences. Or, again, has not the Church championed the cause of reason against those who would deny its value—against Berkeley and Hume; against Kant, Hegel and Schopenhauer; against Bergson and the Modernists.

But, on the other hand, the Church will not pass in silence any attempt to exalt unduly the role of philosophy in directing the religious beliefs and practices of men. Philosophy cannot substitute for the revealed doctrine of Christ. It cannot account for the truths of divine revelation which are entirely supernatural—the Trinity, for example; grace and the channels through which grace flows; the presence of our Lord in the Adorable Sacrament; the supernal rewards of eternal life. At most philosophy can here exercise a negative role by demonstrating that objections to revelation drawn from reason and experience can be answered by counter-arguments drawn likewise from reason and experience. Human investigation can here render great aid to the cause of truth by studying certain phenomena, by examining all possibilities of natural causality, and by ascertaining that natural causes cannot cover all the facts. Thus, quite recently, Alexis Carrel dealt with the subject of miracles.

True philosophy can perform no greater service at the

present time than to combat the movement of excessive rationalism. Outside the Catholic Church, there are few who do not accept the notion that Christian teaching is merely the sum total of popular beliefs, superstitions, views, customs, habits, as these grew up naturally amongst people throughout the world. Or, we would be led to accept the thought that Christian doctrine is the result of a compromise between the great religious systems of antiquity, with such additional compromises as were effected through the centuries by force of the speculative contributions of thinkers both within and without the Church.

A true history of philosophy would give denial to all such assertions. It would show that Christianity did not emerge as a synthesis of Persian religious belief, Greek philosophical thought, and Roman state absolutism. The doctrine of divine grace is not the historical consequent of the Eleusinian mysteries. Jesus Christ, the Sun of Justice, is not the occidental counterpart of Mithra, the *Sol Invictus*. All the speculations of heretics have not changed the original Creed by the addition of a single element. At most, heresy has impelled the Church to state certain articles of the Creed more explicity or more emphatically. Nor can all the misty researches of scientists point to facts which would show that a single one of the Church's revealed doctrines had a natural origin.

There has never been a time in the whole history of the Church when true philosophy could more effectively serve the cause of divine truth. We are confronted with a situation similar to that which faced the great theologians of the thirteenth century. When Aristotle was first introduced into Christian Europe he was clothed with the rationalism of the Arabian philosophers. There was grave danger that the new-sounding doctrines, with their powerful appeal to reason and their tendency to interpret all things in purely natural terms, would corrupt all Christianity. Had not

brilliant men of genius and devoted saints of the Church plunged boldly into the movement—mastered the new philosophy in all its details, purged it of errors, strengthened it by their own researches, and diverted the full force of that powerful stream into the channels of Christian thought, there might well have been a defection from the Christian religion in the thirteenth century as disastrous as that which occurred in the sixteenth.

The Church will, of course, last till the end of time; but the number of her adherents, their faith, their hope, their charity, depend in large measure upon the productive scholarship of Christian men of learning.

Without Christian leaders in intellectual activity, there can be little hope of bringing the people of our great country to an acceptance of the truth of Christ. Nay, more, without such scholarly pre-eminence there is bound to be increasing deflection of our Catholic people, especially of our Catholic young people, from the true fold. Due to causes which need not here be enumerated, Catholic scholarship has not yet taken its rightful place in America. Let us express the hope that, by the aid of this and similar associations, young men may be encouraged to engage in intellectual pursuits and to achieve acknowledged eminence in the world of learning. And I wish it to be understood that I here refer not merely to those who have consecrated their lives to the sacred ministry—*I refer with particular emphasis to our laymen.* Not by opposing, not by casting ridicule, but by mastering the current of the time can we hope to direct the flow of intellectual accomplishment so as to advance the cause of Christ, our Master.

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THE FRONTIERS OF PHILOSOPHY AND THE LIMITATIONS OF SCIENCE

IN his essay on Coleridge, John Stuart Mill has pointed out that the idealism of German philosophy and of Coleridge himself was a reaction against the empiricism of the eighteenth century. In the same essay Mill has also pointed out that there reigns a *bellum internecinum* between the partisans of empiricism and the partisans of idealism: empiricism, in fact, is accused of making men beasts while idealism is accused of making them lunatics.[1] Mill himself decided to follow the beasts of empiricism, though with reservations. For myself, I fear that, in the parallel problem of the relations between science and philosophy, I must ask you to follow me in the direction of the lunatics.

And in order not to create any false impressions, I ought to explain at the outset the nature of this lunacy. In the first place, it undertakes to disregard the advice of St. Bernard on the value of humility: it begins with an act of arrogance by saying that philosophy, in its essential structure and function, is absolutely independent of the data of the experimental sciences. It asserts, in the second place, that philosophy contains implicitly an evaluation of science because it contains a more necessary apprehension of reality. In the third place, it proposes to show that the so-called conflict between philosophy and science arises primarily because neither scientists nor philosophers have respected or, in some cases, even understood the meaning of the methods to which they have committed themselves. For example, the surprising conclusions to which Mr. Arthur Stanley Eddington has come on the essential nature of the universe as "mind-stuff" smack more of an idealistic epistemology than of science, and, in any case, transcend the

[1] John Stuart Mill, *Coleridge*, in *Dissertations and Discussions* (London, The New Universal Library, n. d.), pp. 330-334.

method which he lays down for himself as a scientist;[2] the idea of Mr. Oliver L. Reiser that God is light and that we should all become sun-worshippers is, in spite of the great wealth of facts surrounding it, more in the nature of a psychic bid, relieved, perhaps, by a suspicion of humor, than a scientific conclusion;[3] and, to mention only one more, the contention of Mr. J. B. S. Haldane "that the spread of science leads inevitably to atheism" is bad philosophy and bad science as well.[4]

Now, such a state of affairs is the source of considerable confusion to anyone undertaking to investigate the relations between philosophy and science. As Plato would say, neither the scientist nor the philosopher has stuck to his last. And this is not quite all. Both scientists and philosophers alike have interpreted the meaning of their own and each others' theories in the light of a very definite theory of knowledge. Thus, the elder Haldane has very pronounced Hegelian convictions, and in his latest book he implies constantly that there is a secret alliance and a mutual confirmation between absolutism and the latest findings of bi-

[2] C. E. M. Joad has shown the idealism of Eddington: cf. his *Philosophical Aspects of Modern Science* (London: Allen and Unwin, 1934), pp. 19-47, 193-195, etc.

[3] Oliver L. Reiser, *Philosophy and the Concepts of Modern Science* (New York: The Macmillan Co., 1935), pp. 194-195: "In brief I wish to argue that *god is light!* . . . The sun is to visible things as intelligence is to knowledge. This is a fundamental analogy which shows us how dependent we are on the sun not only for the satisfaction of our material needs but also for the spiritual analogies and inspirations we have."

[4] *Science and the Supernatural*, a correspondence between Arnold Lunn and J. B. S. Haldane (New York: Sheed and Ward, 1935), p. 362. In the course of this correspondence, Haldane examines the Thomistic arguments for the existence of God, only to reject them. I am not concerned here to prove that his rejection is not well founded (which is certainly true), but simply that it is not even based on a correct interpretation of the texts of St. Thomas Aquinas. He is certainly free to reject what he considers to be wrong; but the normal procedure in such cases is first to understand what may later be rejected.

ology.[5] Among philosophers, apart from the well known case of Bertrand Russell,[6] there is Mr. C. E. M. Joad who, in spite of very definite tendencies away from idealism, succeeds in returning to an idealistic position only by a different and more laborious direction. For he rejects the idea that the universe is made up of just patches of *sensa, i. e.,* the content of sensations, in favor of the idea that the universe is made up of thought-patches as well.[7] The results are disastrous. For we have now to relate, not two, but three universes to each other: we have to relate the universe as it is in itself (if it is at all) to the universe as it appears in our experience, and both of these to the universe of science.

It is impossible, therefore, to discuss the relations between philosophy and science without first discussing the universe which each conceives that it is called upon to explain. Perhaps this statement is an implicit concession to idealism. I ought to say rather that it is necessary first to discuss the nature and validity of human knowledge. But fortunately we are not thereby required to consider at length the so-called epistemological problem. For it happens that history itself is working out its own solution. Idealism, in fact, has always been committed to the proposition that a psychological problem can have metaphysical consequences, *i. e.,* that an analysis of knowledge will have an effect on the nature of reality. Strange conclusion, indeed, that the criticism of Kant, which had effectively murdered metaphysics, should become the foundation on which the house of idealism was built! I suppose it was better for

[5] J. S. Haldane, *The Philosophy of a Biologist* (Oxford: Clarendon Press, 1935). Cf. *e. g.,* pp. 27-28. Cf. a parallel analysis in an earlier work, *The Philosophical Basis of Biology* (New York: Doubleday, Doran & Co., 1931), pp. 3-40.

[6] Cf. *e. g., Our Knowledge of the External World* (Chicago: Open Court Publishing Co., 1915), and *The Problems of Philosophy* (New York: Henry and Co., n. d.)

[7] C. E. M. Joad, *op. cit.,* ch. iv-vii.

a bankrupt reason to construct its own universe than to live the nightmare that it had inherited from Luther. Maybe idealism, as it has well been said, had to be tried, if only to reveal its fatal logic. For what the history of idealism has shown comes to this. Whereas once reality was not only meaningful but also, if I may coin a word, *beingful,* and the human intellect could grow by being nourished by the necessity and inexhaustible richness of being itself, with idealism, that same intellect, locked fast within the universe of its own making, finally made a miserable god of itself and was left to worship an infinite void. Truly a curious paradox that both god and creature should be locked within the same prison!

This tragic lesson of idealism is significant for more than one reason. It illustrates with terrible accuracy a fact concerning the history of philosophy that is not always observed. This fact may be stated in the following way. Granted that there is no such thing as an historical determinism, it still remains true that history contains a metaphysical determinism. The history of philosophy contains more than the interplay of isolated opinions; it contains the inner history of ideas. I believe that philosophy has preserved an inner unity of structure which the ebb and flow of opinion have served only to clarify. For our ideas are neither static nor inert. Because they are activities of the human mind, they contain all the dynamism of this mind. They are expressions of energy which are also revelations. And that is why it is possible to speak of a metaphysical determinism in the history of philosophy. Ideas carry their own consequences within themselves. History is thus, in a sense, a metaphysical drama, for it reveals through the discourse of action the theme that the ideas summed up originally in the unity of their existence. Ideas in action, that is to say, reveal through history the inner necessity and significance of their structure, and like a

Greek drama, they execute to the last detail all the implications of their content.

These considerations have a very direct bearing on our present problem. For, supposing that philosophy is a distinctive rational activity, history should contain some mark of its presence. I am proposing, in other words, that the history of philosophy is a discipline through which philosophy itself has been forced to clarify its own meaning to itself; and I am proposing, furthermore, that the problems which it has had to meet are, in a real sense, the means and the occasion of its self-clarification. This self-clarification we may conceive to be the natural history and biography of the human reason, while the problems themselves are the critical or frontier issues which this reason has been forced to meet. With some qualifications, these issues appear to be the following: 1. *reason and revelation;* 2. *reason and certitude;* 3. *reason and science.* The first problem is concerned with a rational order of knowledge within a Christian universe. The second problem is concerned with the psychological aspects of certitude, while the third is concerned with its metaphysical aspects. The connection among these problems is not in the least artificial. For all three have revealed to the human reason, through the pressure of experience and conflict, the essential direction and the enduring meaning of its activities. For the sake of perspective, therefore, I must mention the first two, even though the third problem is of immediate interest.

In his Gifford lectures, Professor E. Gilson has shown that on a purely historical level the notion of a Christian philosophy corresponds to an actual fact.[8] It is historically demonstrable that the rationality of reason and of philosophy has been completed and clarified by the divine revelation: reason has become more rational to itself through

[8] E. Gilson, *L'ésprit de la philosophie médiévale,* 2 vols. (Paris: J. Vrin, 1932).

being Christian. The participation of man in the divine life has enabled him not only to recognize more clearly the dignity of his nature but also to build a society which reflects the gradual embodiment of such an idea. Such a task was the animating spirit of mediæval civilization.[9] It was not by suppressing, but by constantly turning to, such a civilization that the mediæval man developed a theory of nature which the philosopher and the scientist alike could investigate. If the philosophy of St. Thomas Aquinas, to single out an eminent instance, means anything at all, it is that the rationality of reason cannot be purchased at the expense of the supernatural dispensation within which it exists, and that the supernatural economy of the universe is in vain if it suppresses in any way the rational order which it has come to save.

This delicate balance can be and has been disturbed. The modern mind has been disposed to separate where the mediæval mind was disposed to distinguish.[10] Political naturalism[11] and humanism,[12] for example, undertake to give independent existence to what, at least in principle, mediæval thinkers in the main undertook to define separately. Mediæval thinkers had said that it is possible to define a nat-

[9] Cf. *e. g.*, Christopher Dawson, *The Making of Europe* (New York: Sheed and Ward, 1932), and the monumental work of Gustave Schnürer, *L'église et la civilization au môyen age* (French translation by G. Castella and M.-Th. Burgard), 2 vols. (Paris: Payot, 1933-1935). Cp. also the instructive essays of E. Gilson in *Les idées et les lettres* (Paris: J. Vrin, 1932).

[10] To be entirely correct such a statement would require very definite qualifications. I certainly do not mean that the mediæval man did not separate where he should have only distinguished or even that he always distinguished whenever it was necessary. But the mental universe of the mediæval man was charged with principles of its own correction and rectification; which is the main burden of my present contention.

[11] Cf. the interesting essay of Christopher Dawson, *Religion and the Modern State* (New York: Sheed and Ward, 1935).

[12] Cf. Louis Mercier, *The Challenge of Humanism* (Oxford: Clarendon Press, 1933).

ural order in man; modern thinkers, on the contrary, proceed as though this natural order is a subsistent absolute. And thus it happens that the Christian doctrine of providence becomes transformed into the eighteenth century doctrine of law. But even in this fragmentary form such ideas can still be recognized as coming from a Christian soil. These reflections show, consequently, that, with special reference to philosophy, it is necessary always to keep in mind that while philosophy is natural and rational in its content, it is not entirely so in its history.

The problem of certitude in its psychological aspects need not detain us very long. It seems to spring naturally from Platonism. St. Augustine, for example, labored at one time in his life to determine the veracity of his senses and his reason; and it is the nature of the victory which he achieved rather than the victory itself that is particularly interesting at the moment. If ultimately he fled to God to guarantee the truth in his mind, it was only to confess that he never quite fully trusted the infirmities of human nature; and that in the problem of sensation he quite distrusted the knowledge which the soul could acquire through the body.[13] It was not without a struggle that the thirteenth century gradually, but by no means fully, gave up these ideas.[14] One persistent difficulty had always been how a constantly changing universe could produce such a thing as certitude in the human mind. This difficulty is deeply Platonic, just as its solution is deeply Aristotelian. Aristotle, in fact, has shown that change without an immanent element of unity and permanence is impossible. There is thus an ontologi-

[13] St. Augustine, *Liber 83 Quæstionum*, qu. ix; Migne, P. L., vol. 40, col. 13.

[14] Cf. E. Gilson, "Avicenne et le point de départ de Duns Scot" (*Archives d'hist. doctr. et litt. du môyen âge*, ii, 1927), p. 117 ff. For St. Thomas, cf. the brief analysis in A. Pegis, *St. Thomas and the Problem of the Soul in the Thirteenth Century* (Toronto: St. Michael's College, 1934), pp. 188-202.

cal ground for permanence and therefore an ontological foundation for certitude. Through St. Thomas Aquinas these ideas, genuinely Aristotelian, have had a definite influence in the history of western philosophy.

The problem of the relations between reason and science, finally, takes a special point of departure in modern thought. It is generally complicated by epistemological considerations. Modern physicists, as a rule, are idealists. Thus, whenever they undertake to relate their findings to the universe that they are supposed to investigate, it is almost invariably through the lenses of an idealistic theory of knowledge. Now, were this the only difficulty, our present problem would be purely an epistemological one. But that is not the case. The twentieth century scientist, and especially the twentieth century physicist, is extremely self-conscious. He wants to know the nature of his method as an investigator and the facts which such a method can investigate. Hence he is very unwilling to subscribe to the dogma of his nineteenth century predecessor that science would lift the veil of mystery from the universe. On the contrary, he is adding to such a mystery. He says quite frankly that he does not know how important his theories are from the standpoint of the universe itself. Hence the problem which contemporary physics has raised for the philosopher: what is the ontological value of scientific knowledge? The exact meaning of this question may be seen by considering the reflections of Eddington on the meaning of his science.

"Until recently," he writes, "it was taken for granted that we had knowledge of a much more intimate kind of the entities of the external world. . . . The Victorian scientist felt that he knew just what he was talking about when he used such terms as *matter* and *atoms*. Atoms were tiny billiard balls, a crisp statement that was supposed to tell you all about their nature in a way that could never be achieved for transcendental things like consciousness,

beauty or humour. But now we realize that science has nothing to say as to the intrinsic nature of the atom. The physical atom is, like everything else in physics, a schedule of pointer readings. The schedule is, we agree, attached to some unknown background."[15] Caution is thus the watchword of the new physics—caution both in the theories which it pronounces and in the value which it attaches to them. Eddington, therefore, utters a word of warning: "Those who look over his (the scientist's) shoulder and use the present partially developed picture for purposes outside science, do so at their own risk."[16] Nor does this lack of finality embarrass the scientist: "The lack of finality of scientific theories would be a very serious limitation of our argument, *if we staked much on their permanence.*"[17] Now that is not the case. "Proof," writes Mr. Eddington, "is an idol before whom the pure mathematician tortures himself. In physics we are generally content to sacrifice before the lesser shrine of plausibility."[18] Modern physics, after all, is only saving the appearances. Hence we find that the value of scientific laws with respect to the future is very modest. Thus, in view of the developments in quantum physics, we learn that "the laws governing the microscopic elements of the physical world . . . do not predict what the individual will do next. These laws indicate several possibilities in the future and state the odds on each."[19] The scientist, in fact, gambles on the future. As Mr. Eddington says, "he studies the art of the bookmaker not that of the trainer."[20] In brief, scientific laws pretend to

[15] A. S. Eddington, *The Nature of the Physical World* (New York: The Macmillan Co., 1928), pp. 258-259.

[16] *The Nature of the Physical World,* p. 353.

[17] *The Nature of the Physical World, ibid.* The italics are mine.

[18] *The Nature of the Physical World,* p. 337.

[19] *The Nature of the Physical World,* pp. 302-303.

[20] *The Nature of the Physical World,* p. 301.

be neither significant nor permanent in their interpretation of reality.

For what knowledge does physics give of reality? Eddington has defined this point in several ways. "This teaches us that what exact science looks out for is not entities of some particular category, but entities with a metrical aspect. We shall see . . . that when science admits them it really admits only their metrical aspect and occupies itself solely with that."[21] This means precisely that "whenever we state the properties of a body in terms of physical quantities we are imparting knowledge as to the metrical response of various metrical indicators to its presence, *and nothing more.*"[22] But we have left undetermined the "inner un-get-able nature,"[23] since "scientific investigation does not lead to a knowledge of the intrinsic nature of things."[24]

These results are the product of a well articulated principle of method in science: "It is a current scientific doctrine" which comes to this: the physicist has a number of quantitative symbols through which he expresses his ideas.[25] Only through such symbols can physics express its interpretation of the universe. The result is that physics, having adopted a quantitative method, finds that only quantitative facts have a significance for it.[26] As Eddington would say, to the physicist an elephant is a mass of two tons.[27] It is thus recognized that our knowledge of the external world cannot be separated from the nature of the apparatus and the means by which we obtain it. In other words, only those concepts have a significance in physics which the method of physics is capable of constructing.

[21] *The Nature of the Physical World,* p. 105.
[22] *The Nature of the Physical World,* p. 257. The italics are mine.
[23] *The Nature of the Physical World, ibid.*
[24] *The Nature of the Physical World,* p. 303.
[25] *The Nature of the Physical World,* p. 254.
[26] *The Nature of the Physical World,* p. 271.
[27] *The Nature of the Physical World,* pp. 251-252.

This ought to mean, and in fact does mean, that the physicist's view of the universe is limited by his method to one that is exclusively quantitative or metrical.

Hence the inevitable question: what sort of certitude is such a method capable of producing? In the first place, the scientist is agnostic with respect to the nature of reality. He may guarantee his facts and their accurracy; he does not guarantee their value as an analysis of reality. As a scientist, he thinks exclusively on a factual plane. He suffers from the self-imposed limitation of never passing from the existence of a fact to the necessity of the same fact. His universal propositions are not really universals at all. They are statistical averages, with a gambling chance of being true. For universal propositions are based on a necessary connection of essences, and necessity is a word which science does not know. Its view of the universe is, as Maritain has said, perinoetic.[28]

Now such a method is perfectly self-consistent; and, indeed, it has produced brilliant results. But it suffers the defect of not being always followed. Whatever may be the certitude that the scientific method is capable of producing, it still remains that its object is only an aspect of reality. We cannot deny that science deals with beings, and therefore with causes; but we must remember, also, that causality is, so to speak, the background on which physics rests. And this is precisely the difficulty. For if the method which science has adopted is the basis on which its object has been defined, on what principle can the scientist justify his elimination from the universe of whatever such a method does not define? In other words, why should he consider as nonexisting what he is incapable, as he admits, of investigating? And yet, listen to Mr. Eddington: "We have dis-

[28] J. Maritain, *Les degrés du savior* (Paris: Desclée de Brouwer et Cie, 1932), pp. 405-406.

missed the metaphysical conception of substance."[29] Again: "But the solid substance of things is another illusion. It, too, is a fancy projected by the mind into the external world. We have chased the solid substance from the continuous liquid to the atom, from the atom to the electron, and there we have lost it."[30] I cannot follow here the reasoning of Mr. Eddington, for I cannot see what relation there exists between the scientific method which he postulates and the problem of substance which such a method must, by definition, ignore. In such cases, Mr. Eddington proceeds as though what he cannot define does not exist; which is good Cartesian idealism but bad scientific method. Hence it is in spite of Eddington's idealistic fancies, but in accord with the method which he does not always follow that the question of another approach to reality is raised by the philosopher.

From a philosophical point of view, indeed, science has limited itself to only an aspect of reality; it is not concerned with the whole of reality or even with what is most necessary within it. In this sense, the field of science is an abstraction from the unity of existence; and what science cannot do is to state the existential value of its abstraction.[31] Now, some reflection on this fact yields the conclusion that

[29] *The Nature of the Physical World*, p. 261.

[30] *The Nature of the Physical World*, p. 318.

[31] This point of criticism is well taken by F. R. Tennant in his *Philosophy of the Sciences* (Cambridge: University Press, 1932), pp. 4-6, 142, etc. Professor Tennant's historical views are sometimes less fortunate, as, *e. g.*, when he calls John Scotus Erigena the father of Scholasticism (*op. cit.*, p. 162)! And from a philosophical point of view it is necessary to add that the criticism of science which is proposed in this book rests on a phenomenalism which assumes, after the fashion of John Locke, that, since knowledge begins in and with sensation, it begins by being *purely* sensible. But in a being, the principle of whose existence is spiritual, what is the meaning of a pure sensation? The procedure of English empiricism has been to make men brute animals in the process of endowing them with sensations. Mr. Tennant is not free of such preoccupations.

any method of knowledge which proceeds by an accumulation of factual references to discover the nature of reality is always concerned with that nature but never has it as its object. In other words, a knowledge of reality, inductively derived, is incapable of yielding the apprehension of what is essential and necessary in the order of being. This is simply another way of saying that a knowledge of reality which pretends to be necessary cannot be based on the diversities of things. The reason for this fact is not that things as diverse are not necessarily so, but that from the standpoint of their diversity we are unable to say what elements are necessary to the constitution of their essential being. For so long as we are unable to define things, we must rest content with saying that they do, in fact, possess certain attributes: we can measure the value of our knowledge of things from the standpoint of the things themselves only when we have an ontological limit by which to measure such knowledge. Consequently, given the present condition of our knowledge, we must conclude that a knowledge of what is necessary in the order of existence must be transcendental. Philosophy, therefore, is concerned with reality purely from the standpoint of existence. In this sense, philosophy is identical with metaphysics, and in this sense also, metaphysics has for its object that which is necessary in the order of existence.

But the object of metaphysics thus defined corresponds exactly to the essential pursuit of the human reason. If I may use a word that is becoming fashionable, there is a tension between the object of metaphysics and the pursuit of certitude, for metaphysics thus understood is simply the external expression of an inner and connatural need. The search for being is the search to fill the inner poverty of being. But, it may be asked, how shall this universe of variety become in any sense the object of your knowledge? And yet, what does change mean from the standpoint of

existence? It is not, as with Greek philosophy, a story told and retold, a cyclic renovation of the face of reality. It is the travail of being itself, its autobiography, even as the pursuit of truth and certitude is the autobiography of the human mind. It is as though the reason of man sees mirrored in change the features of its own yearning, as though metaphysics is the outward meditation on being of an inner sense of contingency. It is as though change contains, writ large, but not in letters that Plato knew, the features of the mind's pursuit, as though it reveals the prayer of the soul to the God of its existence. This is the culmination of both a theory and a life; and metaphysics is, in this, its deepest sense, the assent of the soul to its God.

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CONTINGENCY IN PHYSICAL LAWS

IN this discussion a great economy of time and effort will be effected by giving at the start a clear definition of terms. The first term we encounter is that of cause. As we all know, the term "cause" is used in a variety of meanings. I think it most feasible to mention the more outstanding meanings, and then put them all aside except the one meaning which we wish here to consider. Four classical meanings have come down to us from the time of Aristotle: material, formal, final and efficient cause. It is only about the last named, the efficient cause, that I wish to speak today. But the efficient cause must again be distinguished into two kinds: there is the agent that acts arbitrarily, as the experimenter who produces an electric spark in the laboratory; and the agent that acts necessarily, as the electric charge on the clouds producing the spark which we call lightning. We shall speak of necessarily-acting causes, since

only they are subject matter for physics; the experimenter is studying electricity, he is not studying himself.

Having thus narrowed down the scope of our inquiry, we discover still another point to clarify. Philosophers say that the efficient cause *produces* the effect, that the event or change which takes place owes its very existence to the action of the efficient cause. But what is now generally meant by causality in the physical sciences, excepting perhaps in the theory of emergence, is simply the sequence of events in external nature. I say "in external nature" in order to distinguish this special meaning from the purely subjective category of Kantian and similar philosophies.

The point to be especially noted is that the events of nature, which are the subject of the physical sciences, are repeated with sufficient regularity to enable the scientist to write the law. This regularity has come in recent times to be called " Determinism." While the philosopher concedes to the scientist the right to attach to a technical term whatever meaning may seem most useful, so long as that meaning is clearly defined and not confused with other meanings, the philosopher must object to the scientist's pretending, as is often done, that there is no other intelligible meaning for the term "causality." Hence I agree to discuss the scientific meaning of causality, but I enter a disclaimer in the words of Professor Adams, of the University of California: "I am bound to accept the judgment of scientists that they are occupied solely with observing the temporal sequences of occurrences and with formulating the laws of such occurrences, if that is what they say. But I am not thereby constrained to identify causal determination with temporal sequence."[1]

Our next term to be defined is "contingency." In philosophy, contingency signifies an absence of necessity. It ap-

[1] G. P. Adams et al., *Causality* (University of California, 1932), p. 221.

plies both to existence and to activity. By saying that a being exists contingently we mean that its non-existence was possible, or, likewise, that the manner of its existence could have been other than it is. In this paper we shall start with the *de facto* existence of the material world, and consider the term contingency as applied only to activity. To act contingently means, philosophically, to act without predetermining necessity, to act freely. But among scientists another meaning has come to be attached to contingency of activity, and that is *irregularity*. Although this last meaning has often been confused with freedom, the two are not at all the same. Contingency in the sense of irregularity signifies that in an individual event there is some variation from the uniformity which is expressed in the physical laws. In other words, though the event be entirely determined by the antecedent material conditions, and therefore in no sense free, yet we do not know the antecedents sufficiently well to state the exact determinants which brought about the event and made it take its particular character. It is this sort of irregularity which has occasioned the present disturbance in scientific circles.

In these days of rapidly recurring crises it is perhaps not surprising that there should be a crisis, if not something approaching actual bankruptcy, in the realm of science. The most alarming symptom of this crisis is the frequent assertion that there has been a breakdown in the constancy of the physical laws. To understand the gravity of the situation we need only reflect that scientists have been convinced—and, in fact, science has been built on the conviction—that there is a regular sequence in the events of nature. Given a certain set of conditions, then another certain set of conditions will follow. It is this constancy of nature which physical laws are intended to express, and the constancy has been termed by scientists, rightly or wrongly, "causality." Scientists have, moreover, become convinced

that this constancy, or causality, can be correctly expressed in mathematical symbols, accurately stated in equations and subjected to all the transformations of which mathematics is capable, without any infringement on the veridical correspondence to objective facts as discovered, or to be discovered, by observation or experiment.

I. *The Crisis.*

The first disquietude over this conviction came with the theory of Neils Bohr that the electrons in the atoms change their orbits not by continuous motion, but by discrete "jumps." These jumps were a vindication of Planck's quantum theory and had a devastating effect on the smug complacency of the scientists. Permit me briefly to quote the expressions of some of the more prominent writers. Einstein reluctantly concedes it is "in the quantum theory that Newton's differential method becomes inadequate, and indeed, strict causality fails."[2] "The laws of the new physics," says Arthur H. Compton, "cannot predict an event; they tell us only the chances of its occurrence."[3] Arthur Haas, of the University of Vienna, declares that the "sharply defined causality which is evident in macroscopic physics," is not evident in atomic phenomena.[4] Sir James Jeans joins the chorus with the statement that "the new physics has got rid of mechanical determinism, but only at the price of getting rid of the uniformity of nature as well!"[5] Langevin, more reasonable, claims that the crisis is not in determinism, but in mechanism; and Mineur lays his finger on the exact source of the trouble when he says that Newton, by expressing the astronomical laws mathematically, implied

[2] *Nature*, Mar. 26, 1927.

[3] "Do We Live in a World of Chance?", *Yale Review* (Sept., 1931).

[4] *Wave Mechanics and the New Quantum Theory* (London, 1928), p. 119.

[5] "The New World Picture of Modern Physics", *Nature* (Sept. 7, 1934).

that they were valid *everywhere,* and by employing differential equations involving $t+dt$, supposed the regularity of nature to be verifiable on any scale however minute.[6]

It is not to be thought that scientists are ready complacently to abandon their cherished principle of causality. That would be to forego everything they had been accustomed to call science. Einstein and Jeans (in the very passages which I cited) protest against this rejection of the sacrosanct principle of all science. Planck's entire book, *Where is Science Going,* is devoted to the defense of the thesis that science is still possible. But surely nothing further is needed to show the grim nature of the crisis in which scientific men find themselves involved.

II. *Origins of the Crisis.*

The origin of the present impassé of science has been traced by Compton as far back as Leucippus and Democritus. Those early physicists held that everything without exception happens by necessity. Many scientists of the past two centuries adopted the same formula, and yet at the same time boasted of their experiments, inventions, and mastery over nature. As Compton points out, their boast was logically inconsistent with their philosophy of necessity, because no experiment or mastery over nature is possible if human acts are likewise included in the law of necessity. Nevertheless, universal necessary causality was accepted as the only scientific principle, and a free act was laughed out of court as "uncaused."

But, putting aside the free activity of man and the supposed absolute nature of physical necessity, I think everyone will admit that physical causality is predetermined causality. Another element, however, enters when we speak of the *regularity* of the events of nature. It is too often

[6] Cf. H. Dopp, "Le Determinisme Scientifique", *Revue des Quest. Scient.* (v. 27, n. 2).

overlooked that necessary causality does not perforce mean a regular sequence of events; it does not mean that the same event must be repeated over and over; necessary causality only means that *if* the conditions are the same the event will be the same. But what is there in the concept of necessary causality to guarantee that the identical conditions will ever recur? It is true, we discover the physical laws by reason of the fortunate fact that there are in nature many like antecedents which are in turn followed by like consequents, but it is a mistake to regard such happy sequences as synonymous or co-extensive with necessary causality in general. Necessary causality does not of itself insure the repetition of any event. In fact, the most seasoned experimenters admit that even under laboratory conditions they cannot exactly reproduce the antecedents, and that therefore there will always be a slight variation in the consequent event. We may well wonder, then, how it is possible, with the apparently haphazard way things happen in external nature, that there should be any orderly recurrence of events. Yet it is a matter of observation that events are repeated with a remarkable degree of regularity. Similar antecedents recur, giving rise to similar consequents. Right here a new light dawns on this whole question. *Superimposed on the law of necessity is the law of recovery.*

It is not this large-scale regularity of natural events that has been challenged by the new theories. But we are told that on a very minute scale there is only irregularity. Assuming such to be the case, then there are only two escapes possible. One is to adhere to necessary causality, and yet maintain that irregularity of the small scale produces regularity on the large scale. The other is frankly to admit free will in nature. You are doubtless inclined to say that in either case there is irregularity, and, be it on ever so small a scale, it would be sure to spread and would very quickly destroy the regularity of large-scale events throughout the

whole of nature. In such a world there would be a lack of basic precision, and the whole of it had long since been wrecked by what Hartshorne calls the "element of wildness."[7]

These difficulties, I am prepared to maintain, arise from our taking too mechanical a view of nature. It should, indeed, be noted at this point that not all necessary causes are mechanical. Thus organic processes, while necessary, are not mechanical. Many scientists, however, endeavored to reduce all causality to mechanics. They did more. They assumed that all the refinements of mathematics when applied to the laws of nature could be verified by experiment. It was here especially that the accepted theory of nature's uniformity broke down. If, for example, I express two physical quantities by an equation, I may divide both sides of the equation by any number I wish and still have a true equation. This assumes that there is no minimum particle and no minimum action in nature. Planck's quantum destroyed this assumption. "Radiant heat," said Planck, "is not a continuous flow and indefinitely divisible. It must be defined as a discontinuous mass made up of units all of which are similar to one another."[8] In other words, there is no minimum quantum in mathematics but there is such a quantum in physics.

Nor did the quantum disturb merely the mathematical interpretation. It disturbed the very observation of the physical phenomena. Light, or the electromagnetic radiation, is made up of photons. Now, if I am to measure the velocity of an electron I must determine its position by at least one photon's impact; but the photon deflects the electron, gives it a "kick," as Eddington says, and hence does not report its exact position.

[7] "Contingency and the New Era in Metaphysics", *Journ. of Phil.* (v. 29, n. 16).

[8] *Where is Science Going*, p. 19.

This is one phase of Heisenberg's Principles of Indeterminacy. There are other forms of the same principle. In a hypothetical experiment, a single photon is sent through a tiny aperture. It will hit one or other of two photo-electric cells placed in its path, but there is simply no way of telling *which* one. If one cell is set to explode the apparatus, and the other to disconnect the circuit, we cannot predict whether the apparatus will explode or not. From these data Compton concludes that there is no longer any causality as a "physical principle." Heisenberg himself has said the same: "The resolution of the paradoxes of atomic physics can be accomplished only by further renunciation of old and cherished ideas. Most important of these is the idea that natural phenomena obey exact laws—the principle of causality."[9] Nor is the trouble altogether in the fact that we cannot tell what a photon will do in a given instance; the photon itself seems to possess the incompatible characteristics of a wave and of a bullet-like particle. "Photons and electrons and protons," says Compton, "were found to move like waves"—unlike ordinary projectiles. Which characteristic will show up in a test we do not know; we can only speak in terms of probability. V. F. Lenzen, of the University of California, sums up the situation thus, "Each possible value of a physical quantity is characterized by the probability that the system will be found to have that possible value."[10]

III. *Various Diagnoses.*

Having reviewed the present crisis and seen something of its origin, let us turn our attention for a moment to a few of the diagnoses offered by scientists. Several contributors to *Science et Loi*,[11] in explaining the erratic per-

[9] *The Physical Principles and the Quantum Theory.*

[10] "Indeterminism and the Concept of Physical Reality", *Journ. of Phil.* (v. 30, n. 11).

[11] *Science et Loi* (Paris: Alcan, 1934).

formance of electrons and other minute particles, hold fast to determinism, but blame our trouble on our lack of a sufficient knowledge of details; perhaps an electron is more diffuse than we thought, perhaps the mechanism of the "solar-system" atom should be discarded, perhaps the particles of the atom must be deindividualized. Bridgman, I believe, comes a little nearer to the root of the question when he slyly reveals the average scientist as repudiating indeterminism in public and at the same time assiduously practicing it in his laboratory. He is explaining the "causality concept."

> We assume in the first place an isolated system on which we can perform unlimited identical experiments, that is, the system may be started over again from a definite initial condition as often as desired. We assume further that when so started the system always runs through exactly the same sequence of events in all its parts. . . . Upon the system given in this way, which by itself runs a definite course of events, *we assume that we can superimpose from the outside certain changes, which have no connection with the system and are completely arbitrary.*[12] (Italics inserted.)

In this citation we have the clear admission of an interference with the course of nature, an interference undetermined by antecedent material conditions but originated arbitrarily by the experimenter. Indeterminism may not be revealed in the system experimented upon, but it is a *sine qua non* of the experimenter. Many a scientist in the past has been slow, if not loath, to recognize this fact, but now that the logic of the situation forces him to admit indeterminism in himself, he fancies it is equally logical to admit indeterminism in the material upon which he is experimenting.

There is, at any rate, an increasing realization that the term causality as used in physics expresses a meager sort of causality. Since the phenomena of nature are predeter-

[12] *The Logic of Modern Physics*, p. 81.

mined by their antecedents, they have more of the character of effects than of causes. A more genuine cause is one that is *not* predetermined, the free act; it has effects on the future without being itself totally an effect of the past. "How," asks Eddington, "can I cause an event in the absolute future, if the future was predetermined before I was born?" But having vindicated free causality, and viewing the unpredictable events in nature, he bolts the old physics and actually proclaims free will in the material world. I think you will agree that his diagnosis is rather hasty. There is too much evidence of determinism in nature to permit us to abandon that evidence because a few scientists have experienced a sudden flair for freedom. Calmer counsel reminds us that long before the jumping electrons put in their appearance we had a difficulty similar to the present one. For even when all the factors, on the macroscopic scale, are open to observation, it has often been difficult to name the precise factors which determined the event, and which were neutral. "Any change," says C. D. Broad, "in any process issuing from a given moment contains as factors a *selection* from the changes which enter into that moment."[13] But in minute phenomena many factors are not so much as open to inspection. Why, then, should we cry "indeterminism" because we cannot name the factors? Eddington's rebuttal is that the determinists are "unaware of any deterministic law in the physical field" of an electron.[14] Naturally. We cannot set down the law until we know the determinants.

The real reason why Eddington and others are impatient to learn the exact determinants of an event is because mathematical physics cannot go forward until such determinants are specified. It is, moreover, required that we know the nature of the event, whether it be wave or par-

[13] *An Examination of McTaggart's Philosophy*, p. 234.
[14] "The Decline of Determinism", *Nature* (Febr. 13, 1932).

ticle, what size, what velocity. "For the mathematical description of nature to be successful," says Sullivan, "it is absolutely necessary that natural events be uniquely determinable."[15] In the absence of such information mathematicians resort to the device of "probability." But the success of this device should deceive no one into thinking there is indeterminism in nature, any more than that there is free will in the probability of rain. As Langevin remarks, where there is a lack of precision in our knowledge of the controlling factors of a coming event, there is uncertainty in our mind; but that is quite consistent with determinism in the activity of nature itself. We must refrain from identifying the state of nature with the state of our mind.

We have now arrived at the epistemological angle of our problem. I think you will admit that if physical science is to be distinguished from psychology, normal or otherwise, there must be posited an external nature which is distinct from our thoughts about that nature. However, for our thoughts to be true about nature, it is not required that the thoughts be identical mirrored images of nature. A thought may be true even though there does not exist anywhere in ontological reality any object which is the identical twin of the thought. So long as I am aware that my thought is a construct, and am aware of the factors out of which I constructed it, that thought is true when predicated of objective nature. But, unfortunately, there are many mathematical scientists who suppose that every clear mathematical concept must be duplicated in identical fashion outside the mind; hence the drift toward idealism in such a writer as Jeans. For if you hold the exact-copy theory of knowledge, you must either postulate a platonic world distinct from the data of experience, or end by supposing there is no reality other than your own thoughts. The lure of ideal-

[15] *The Bases of Modern Science*, p. 233.

ism, always present when a defective theory of knowledge is entertained, is tempting many a scientist today. Even Bridgman's *Operational Concept* is but a rear-guard action to stave off idealism. In the same tenor Lindsay writes, "The task of physics is the description of a certain portion of human experience."[16] H. Poincaré endeavors to save the case for realism by warning us that we clothe mathematical symbols in sensible images of what we fancy they stand for, and that our images are at best only analogous to the real facts.[17] But a logical construct is false only when we fail to recognize that it is a construct. Thus if I choose to represent an electron by a fog, as Jeans does,[18] making the fog denser in the areas where the electron is more likely to be, that is a perfectly legitimate device for representing the various shades of probability and a perfectly true construct so long as I recognize that it indicates the probability and not the electron. Otherwise I must postulate some nebulous being in the mathematical heaven of the Phædrus, or else assume that science consists in nothing more than putting a set of empty symbols through their gymnastics and is justified by the fun and zest I experience in watching them perform.

IV. *Solutions Offered.*

(a) Free Will.

One agreeable thing the new physics has done is to make the atmosphere of science more hospitable to the doctrine of free will. C. D. Broad openly reverses the field and strikes out in a brilliant vindication of the free act as not being uncaused but simply unpredetermined. Eddington enlists in the crusade against the superannuated theory of universal and absolute determinism. "On the deterministic theory

[16] "Where is Physics Going?", *Scientific Monthly* (Mar., 1934).
[17] *The Foundations of Science*, p. 140.
[18] *New Background of Science*, p. 245.

of the physical world," he declares, "my hand in writing this address is guided in a predetermined course according to the equations of mathematical physics." Disdaining a pussy-foot word, he brands the theory as a "downright lie."[19] Planck, for all his absorption in the quantum jumps of radiation, is not purblind to man's responsibility to "another law" than that of electrons, and openly avows that "The inner voice of consciousness assures us that at any given moment we are capable of willing this or that alternately."[20] Jeans, too, falls in line by his declaration that although a cause may determine its effect, the cause need not itself be predetermined, and in this fact he sees the compatibility of science with morality and religion. There still remains the mystery of *how* the human will can control the actions of the material human body and through it deflect the course of nature, but in the fact that it does so Compton rightly sees the only basis of any hope we may entertain for the advance of experimental science and invention. All this is grist for the Neo-Scholastic mill. But what the Neo-Scholastic balks at is the propensity of certain writers to parcel out freedom to both the human will and to electrons, share and share alike.

(b) Idealism.

While free will as an explanation of the contingency in nature is hardly entertained seriously by anyone, mathematical idealism has a strong appeal for some philosophical scientists. Sir James Jeans, for example, oracularly asserts that "our knowledge of the external world must always consist of numbers, and our picture of the universe—the synthesis of our knowledge—must necessarily be mathematical in form."[21] Such sonorous sentences are apt to lull

[19] "The Decline of Determinism" *(supra)*.

[20] *op. cit.*, pp. 104, 107.

[21] "The New World Picture of Modern Physics" *(supra)*.

the reader into acquiescence. The fact is that the mathematical interpretation of nature as we now have it is a rather recent development, beginning about the time of Galileo, Leibnitz and Newton, and owes its success largely to the differential calculus. It reduces our audit of nature to the dead level of its quantitative aspects and ignores qualitative differences. Physical science as a result has become a matter of comparing pointer-readings, to which in turn are assigned abstract numbers in order that the readings may be fed into the equation machine, there to undergo any transformation that may suit the whim of the mathematician. If one forgets the many abstractions he has made in the process, if he fails to distinguish between concrete and abstract number, if he feels that he must find in nature the exact counterpart of his symbols, and is moreover charmed, as Descartes was, by the serene certainty of the mathematical method, then, indeed, he may experience a temptation to idealism. It is an easy escape from the weird world that indeterminacy has made of science. Doubtless non-Scholastic writers wonder at the aplomb of such a a man as Doctor Sheen, whose *Philosophy of Science*[22] is serenity and sanity incarnate when compared to the nervous panic which characterizes most of the literature on this subject. But such serenity is not self-satisfied smugness; it is the result of being in the stream of centuries of thought on problems every bit as disconcerting as the present furor about contingency; the result of constant resistence to the siren voice either of idealism or positivism; of patient application of established principles to the intricate matter at hand; the result above all of the refusal to succumb to what Doctor Sheen calls "Lyricism," the strumming of one's philosophical lyre to the tune of the prevailing melody of the passing hour.

[22] *The Philosophy of Science.*

(c) Probability.

A third solution for the impassé of present-day physics is the ancient one of chance. What appears to be chance is exhibited in two ways in the data of modern physics: (1) nature itself acts erratically without the interference of man, as in the case of radioactivity; and (2) the attempt to discover the state of nature deranges that state; "measurement," says Lenzen, "disturbs the state of the system so that the result can be predicated only with a specific probability." This latter is called "operational indeterminacy."

There is no term in this whole discussion so loosely employed as the term "chance." Let us, therefore, ask ourselves what meanings we may reasonably attach to this word. In particular, what do we wish to convey by the expression "a chance event?" Do we mean one without an efficient cause? That would scarcely be reasonable, and besides the specific intent of the term as now used is not to deny a producing agent. Granted such an agent, then it acts either necessarily or freely. But in neither case have we a chance event. Because, if necessitated, the event was restricted to one only possibility, and that is certainly not chance. A thing not often noticed is that necessity and chance are, in fact and in concept, incompatible. Lastly, if produced by a freely acting agent, the event was intended, which again precludes it from being chance. Consequently, there does not seem to be any meaning for chance as applied to nature itself. I therefore contest the assertion that there is "objective or real chance."

It would appear that the only way we can speak of a chance event is in relation to some mind. Thus in many cases we are at a loss to say what brought about a particular event, or what the future will be. "So many causes are acting and in such hidden ways that it is impossible for man

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to predict the result."[23] Such chance is exhibited in the roulette wheel. But we call these events chance in relation to our own mind; we are asserting our own ignorance and are not really predicating any indetermination of the event itself in external nature. Thus understood, that meaning of chance can stand. Another acceptable meaning of a chance event, as Lenzen points out, is one that happens without being intended, as the chance meeting of a friend. When we say an event is unintended we do not necessarily mean unforeseen. A driver may intend to avoid a pedestrian and foresee that he will collide with a lamp-post, without directly intending the latter. Hence by unintended we mean not directly intended, but at best only permitted. Starting with these two valid meanings, unpredictable events and unintended events, Lenzen sets down six derived meanings which have come to be fairly well defined in the parlance of modern physics: (a) events independent of human intentions; (b) events which cannot be accounted for by any physical law thus far formulated; (c) events for which the "ground or reason has not been exhibited;" (d) events which happen "according to the laws of probability;" (e) the term chance may mean the "statistical ratio" itself, as 1/6 for the faces of the die; (f) lastly, chance may even mean regularity, but a regularity for which no other claim is made than that it is purely statistical.

I prefer to discuss this last meaning as the one most pertinent to our problem. Statistical regularity signifies that there has been a certain regularity of events recorded at the macroscopic level, but offers no scheme of regularity for the lower levels. The question immediately arises, *Can* there be regularity on a large scale if there is none whatever on a small scale? A case in point is that of steam; the individual molecules which make up the steam in a boiler

[23] A. Poetker, "Modern Physics and the Principle of Causality", *Proceedings, Jesuit Educat, Assoc.* (Chicago, 1931).

strike against its interior with varying velocities, yet one square inch of the boiler's surface will not exhibit any measurable difference in pressure from any other square inch. On the basis of such data some writers assert that macroscopic regularity is entirely compatible with total irregularity at the microscopic level. I think that statement may be flatly denied. Planck, for instance, has shown that probability theory which is employed as a confirmation of the statement is itself based on "the absolute validity of the principle of causality." Thus, while we admit a degree of wildness in nature, it is a wildness definitely limited by the very nature of matter. Thus the universal attributes of impenetrability and inertia will hamper the play of individual particles. It is easy to see that in such case individual wildnesses will so cancel one another out that for very large groups almost perfect regularity is attained. To have a case of total irregularity, or "pure chance," you would have to suppose that any molecule of the steam might move at any speed whatever from zero to infinity, in any direction whatever, regardless of what other particles might be in its way, at any time whatever and independently of any law of impact. Such irregularity on the minute scale would yield no regularity on any scale. That we *have* regularity on a large scale is a fact, and the only legitimate conclusion from that fact is that there cannot be "pure chance" on the molecular or electronic scale. "If the electron in the atom could do *anything*," says Professor Brown, "no statistics would be possible."[24]

What, then, does probability mean when applied to physical events? Lenzen, in agreement with Planck, rightly maintains that probability, while based on the principle that the events are causally determined, yet addresses itself to the fact that we cannot specify the exact and imme-

[24] *Causality (supra)*, p. 61.

diate determinants which brought about each particular event. Our certain knowledge has limits, and conversely our ignorance has limits. It is in the latter realm that probability operates, and is, as Lenzen says, nothing more than an "expression of our ignorance." It simply defines the degree of our ignorance within those limits. Unfortunately, as Eddington notes, a thing which has fostered the persuasion that probability theory deals with observed facts instead of degrees or ignorance is the use of algebraic symbols to represent unknown quantities. We begin either with empirical facts, say the recurrence of sun-spots, or we begin with determinants known *a priori,* as in the case of dice. From these facts mathematics proceeds by the use of symbols to give the degrees of uncertainty regarding larger or smaller groups of future events. What is certain about the mathematical estimate is the degree of uncertainty we are warranted in entertaining. And although this may be called chance, it does not mean that in external nature under the actual conditions more than one event was possible. Nor can we take Eddington seriously when he puts the probability of 13 trumps at bridge in the same category as the "chance" that an equilateral triangle may have unequal angles. On the other hand, I wish to brand as a serious misunderstanding the supposition that we have a choice between two mutually exclusive types of physics: the mechanical, permitting prediction with utmost accuracy; and the statistical, allowing only probability. Since both types deal only with necessary causes, there is no antithesis between them, and scientists have made a serious blunder in supposing that there is.

We cannot relinquish this particular subject without viewing it from one more angle. We admitted that chance, when not a name for our ignorance, denotes an event not directly intended, and at best permitted. This immediately raises the question: Is there irregularity in the world, even

where not tampered with by man, and is such irregularity compatible with the omniscience of the Creator? I make bold to answer that where the irregularity, or, if you wish, disorder, is incidental to some natural process, as the destruction of one organism for the nourishment of another, or where the disorder itself may be viewed as a means of emphasizing the greater values of human life, as when the cataclysmic destruction of the helpless fauna and flora of geological ages may be viewed as an example of God's indifference to such things in contrast to His providence over men, for whom He never permits it to be impossible for them to attain their final destiny—in such wise, I say, a certain amount of disorder in creation is not only compatible with but even to be expected in the work of omniscience. The irregularity or disorder of many portions of the world serve to set off the ordered portions and to heighten our appreciation of relative values, so that both in activity and in structure the world displays not merely the intelligence of its Maker, but the more sublime attribute of wisdom.

(d) Pure Description.

Let us now turn our attention briefly to the theory that physical laws are nothing more than convenient descriptions of our observations without any assertion as to the nature of the things themselves. Says James Murphy in his introduction to Planck's famous book, "There are some physicists who would reduce the scope of physical science to the bald description of the events scientifically discovered as occurring in nature, and would entirely exclude all theory and hypothesis-building." It is in this strain that Bridgman writes, "The concept of length is fixed when the operations by which length is measured are fixed, . . . *the concept is synonymous with the corresponding set of operations.*"[25] (Italics his.) According to this stand, "the concept is con-

[25] *op. cit.*, p. 3.

stituted," as Lenzen says, "in the process of measurement." So, too, Hume, Mill and Russell, as Professor Pepper remarks, tell us what physicists do, not what nature does.[26] Indicative of the same attitude is the pragmatic device called "complimentarity," according to which one may consider light either as a wave or a particle as may seem most convenient for the problem in hand. Lastly, there is the mathematical symbolism which would make an electron a "system of waves," where the waves are admittedly not real, but merely a graph of the probability of the electron's location. The descriptive method savors of positivism and subjectivism, but it has the advantage that such "concepts" can be neither true nor false (if that be an advantage) because they are not intended to represent an objective state of affairs. But they could hardly be said to exhaust the possibilities of physical science.

V. *Summary.*

In this closing section I shall endeavor to summarize the answers which may be given to the present difficulties of physics, and, where these answers are incomplete, to indicate the lines along which a further solution may be expected.

Even if we limit the notion of causality to the sheer sequence of unfree events, we must recognize that not every regular sequence is a case of such causality, otherwise night would be the cause of day. We must eliminate many irrelevant antecedents of the event and thus isolate those on which it truly depended for its existence and its particular character. This is the purpose of experiment, to identify the "all and only" antecedent factors. That experiment has failed to identify such factors in the case of very small-scale phenomena should surprise no one. The major difficulty is that scientists at present see no way of achieving a suc-

[26] *Causality*, p. 198.

cessful experiment or even observation regarding the minutiæ of nature. It is as if a man wished to observe the habits of wild fowl in their native solitudes but is frustrated by the fact that his very approach frightens the fowl away. Have we, then, reached the limits of observation in the realm of physics? That is quite possible. If so, all we can do hereafter is to make deductions from the facts already established.

If we must resort to probability, we should remember that probability is predicated on the observed determinism of nature. Nor is probability a total indeterminism of knowledge, for, in fact, it sets forth the propositions to which we can give verdical assent. Even when probability has respect to the future, it is based on a determined past. The past is often, it is true, a statistical report; I cannot, however, agree with Lindsay that "The statistical is characterized by its renunciation of determinism." The statistical report makes no such renunciation. And if the statistical average is known to be valid for very large-scale observations, and for innumerable descending scales, certainly no one can doubt the basic determinism of nature exhibited in such a report. It is objected that if there is uniformity at all there should be uniformity on any scale, no matter how minute. Here we have the postulate that was wrecked by Planck's quantum. But the postulate was wholly unwarranted. For if there are atoms in nature structurally, surely we should not be surprised that there is an "atom of action." Just as it is reasonable to suppose, as Albertus Magnus and Aristotelians generally supposed,[27] that there are minimum natural agents, so it is reasonable to suppose that there is a minimum amount of work which such particles can be called upon to perform. Such a particle cannot be divided physically, it can be divided only

[27] Albertus Magnus, *Isagoge in Libros de Gen. et Cor.*, c. 9.

mathematically. But as the mathematical division does not warrant asserting physical division, so, too, I may speak of half a quantum mathematically but cannot secure a half-quantum physically.

The scientific difficulties we have been reviewing arose in large part, as we have noted, from the fact that an invalid theory of knowledge got mixed up unawares with what were supposed to be the purely positive data of experiment. The objectivity of the differential equation was supposed to require a one-to-one correspondence between discrete infinitesimals and actually discrete parcels of nature. In the same way the famous Newtonic expression $t+dt$ may very rightly suppose that all changes in nature are continuous, but that does not prevent some changes from being too abrupt to be detected in transit, for the reason that the indicators, being themselves material contrivances, are not capable of executing a half-way stop. Hence we should not expect that experiment will bear out any and all equations. And because there is a point at which the arithmetical correspondence between numbers and nature breaks down, we should not fly to the extreme of saying that we can know nothing which is objectively true about nature. Scientists would do well to remember that if physical law be understood as a necessary sequence in nature itself, and not some requirement imposed by our formulæ, then a law once established is true always. The new laws of physics must not be looked upon as flouting the old. For if we subscribe to the doctrine that new truths unmake old truths, we destroy the very nature of truth itself and reduce science to the status of a frivolous pastime. The task of science is to see how the new is but a refinement of the old. This is the spirit of Planck, who declares: "I firmly believe, in company with most physicists, that the quantum hypothesis will eventually find its exact expression in certain equations

which will be a more exact formulation of the law of causality."

The principle underlying this hope is sound, but whether the "exact expression" can ever be achieved by mathematics may well be doubted. It would appear that mathematical physics has, in this direction, come to the end of the road. Too long has science been absorbed in the quantitative aspects of nature and endeavored to reduce everything to equations. The time has come when we must turn our attention once more to the qualitative factors arising from what the Scholastics call the substantial form and even to take up again the final causes discarded by Francis Bacon and Descartes. The entire category of qualities has been ignored by mathematics. Qualities were by Locke relegated to the subjective mind, and thus taken out of the field of physics; the remainder of nature was then degraded to a machine, with mass, motion and strain as its only characteristics; to learn the nature of these the physicist turned his eyes to the clock and the meter; taking down the readings he translated them into mathematical symbols and finally ground out what was supposed to be a complete scientific account of the existential world. The only content of knowledge was space-time, and the only logic was mathematics.

Against this over-simplification the philosopher must protest. Nature is clearly not a machine. Even on the inorganic level, chemical combination, to take but one example, is not a mechanical operation, for the reason that the atoms select their partners and stop at a definite number. Affinity and valence, not to speak of organic processes, are inexplicable on a basis of pure mechanics, because, for one thing, discrimination among objects and a limitation of their number are qualitative factors which are foreign to purely mechanical forces. Again, a system operating on strictly mechanical lines has no power of recovery. If the

world were simply a machine the very irregularities observable in its operation, apart from the violent shocks it receives from the arbitrary interference of man, would quickly wreck the whole contrivance. But we know that the elements of a chemical compound when forced to dissolve will reunite; and in many other ways nature repairs its wounds. The world is probably riding to a fall, but it could never have lasted more than a few years had it been nothing but a machine. To operate successfully without a mechanic a machine must perform with the utmost precision. We have seen that nature does not so perform. We need not on that account despair of science, or, what is the same, retire into mathematical idealism; we need only give up the postulate that physical laws must express mathematical precision on every conceivable scale. Let us acknowledge that the world has a way of carrying on with notable success independently of mechanical regularity. Mathematics may still address itself to the task it has so well done, that of suggesting lines of experiment and of fostering inventions, but it need not be regarded as telling us all we can know about nature. The qualitative differences in natural objects and their intrinsic tendencies toward definite objectives, attained in large part by forces other than mechanical—these are things which cannot be included in equations. Physical science, it is true, deals only with necessary causes, but it is a grave mistake to restrict these to the indiscriminate pushes and pulls of mechanics. The only true antithesis of a necessary cause is a free cause; and since no one can seriously maintain freedom in nature, scientists must abandon the false antithesis between necessity and the nondescript "indeterminism" which many of their number have ascribed to the external world. We should remember that if indeterminism does not explain the ordered processes of nature, neither does necessity. For necessary causes can produce a chaos as well as a cosmos. It all depends on how

the necessary forces, whether mechanical or otherwise, are put together, and under what influences, qualitative and quantitative, they set about their work. For all that, the forces of nature as they are *de facto* arranged can and do give rise to irregularities and downright disorder; but they also can and do, to a degree, restore order, and not until science takes account of the non-mechanical forces of restoration will the scientists be able to recover from the nightmare occasioned by the contingency of the physical laws.

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HYLEMORPHISM AND THE RECENT VIEWS OF THE CONSTITUTION OF MATTER.

FROM the dawn of consciousness we have been aware that there is a reality whose existence is immediately evident to us through our senses. It is a reality that is various and changing in appearance. Indeed, it is known to us ultimately because it changes, and we ourselves change in the knowing of it, and to our knowledge of it we respond with love and hate, with joy and sorrow, with hope and fear. It is a reality that excites our admiration and wonder. If we are scientifically inclined, we are curious to learn more about it by accurate observation and experiment; if philosophically inclined, we ask the awful question: What it is?

What is this reality which undergoes sensible change? We call it the sensible world because its beauty and order can be observed by the senses. We call it the physical world because it is subject to sensible motion. We call it the corporeal world because it is extended and has parts, part outside part. But what kind of being is this whose parts come sensibly into being and sensibly cease to be? What is its very essence? Of what is it made?

This is the question which gave birth to all philosophy and experimental science. It is a question which has engaged the minds of philosophers from the time of Thales to the present day; and justly so, because the changing sensible world is the first reality to challenge human reason. We of today are fortunate in that we do not have to face our antagonist alone and unarmed. Great thinkers of the past have accepted the challenge, and though many went down in defeat, there was one at least, the Stagirite, who with keen intellect and dialectical skill wrestled with this reality and claimed the victory, and bequeathed his methods and the fruits of his labors to us as our inheritance.

But that was long ago, and the changing world has greatly changed since then. Was the victory even philosophically complete? Or was there any victory at all? In this paper we shall sketch the theory of hylemorphism which has come down to us from Aristotle, and try to determine whether it explains the nature of this sensible world, of which we now have so much more experimental knowledge than was at the disposal of the great philosophers of the past.

But first let us put the theory in its right light. Hylemorphism is a theory offered in explanation of the nature or quiddity or essence of that kind of reality which undergoes sensible change. Hence it is a philosophical theory, not a theory of experimental science. It is a theory developed by the methods of philosophy, not by the methods of experimental science. It is professedly a rational attempt to go beyond all experience, whether already attained or yet attainable, and to expose the essence of sensible reality. Furthermore, hylemorphism is a physical theory, not a metaphysical theory in the strict sense. It is not a theory of being in the third degree of abstraction, but of sensible being in the first degree of abstraction. Hence it presupposes only an ordinary knowledge of the first principles of being and thought—of the principles of contradiction, sufficient

reason and causality,—and the proper arguments by which the theory is established proceed upward from experience to the essence of the reality experienced, not downward from the general laws of being. In other words, the theory should be established by a rational analysis of experimental facts—that is, of the data of our senses and of our immediate intellectual consciousness—made in the light of the first principles of reason. It is in this manner that the theory will be developed here.

The problem is this: Given our immediate intellectual consciousness and the first principles of reason and the world of sensible reality subject to sensible change; to determine analytically what this reality is. In order to solve this problem we shall consider three preliminary questions. (1) Is the given reality only one thing, or does it consist of many individuals numerically distinct from one another? (2) If it consists of many individuals, are they all of the same kind or are they of various kinds? (3) If they are of various kinds, do individuals of one kind change into another kind? Once we know that substantial change is taking place in the sensible world, then we have only to analyze the phenomenon of change to reveal that the given reality is composed of a purely potential principle which is the ultimate subject of change, and an actual principle which determines each individual to be the kind of thing it is.

Let us now consider the first question. Is the sensible world only one thing, or does it consist of many individuals numerically distinct from one another? To this we can readily answer that it consists of many individuals, and we can have rational certitude that our answer is correct by appealing to immediate conciousness and to our first principles. We human beings are aware through our intellectual consciousness that we are individuals distinct from one another, who think and will independently of one another.

We are conscious of our own individuality, that is, of our own unity and of our absolute distinction from one another.

Furthermore, through our sense of touch especially and our sensory consciousness, we perceive many parts of our bodies, and perceive them as our own. We perceive that we are not indivisible points, but are extended things with various parts, part outside part. We perceive that these parts are so united as to make one thing, which is our own individual and sensible reality. We are aware that our parts have various functions, and we are conscious of the fact that these functions are all our own. We nourish ourselves and grow, we see and hear, we think and will. These are so many signs of the unity of the ultimate principle acting in us and of the unity of our being. Everything in us is ordained to one higher activity which is the life of reason. Our vegetative life is the substrate of our sensory life, and nourishes the organs of sense. Our sensory life is the substrate of our rational life and psychically nourishes the life of reason. These different aspects of ourselves are so intimately united that disorders in one part can cause disorders in another. All of this clearly manifests the fact that our various parts do not function independently of one another, and that all our activities spring from the same root. As a thing acts, so it is. The sufficient reason for a being to act independently and as a unity is that it is an individual. We are conscious that there is only one ultimate principle acting in all our sensible parts. Hence there is only one actual principle of being in us, and we are sensible individuals. But if we are sensible things, we pertain to the sensible world. There are, therefore, many individuals—at least many human beings—numerically distinct from each other in the world.

Besides ourselves we can distinguish many other individuals by reasoning from our knowledge of ourselves and from the principle that things which act independently and

as units are individuals. When we explore the sensible world we perceive that it has many parts which appear to be independent seats or centers of sensible activities. In this way we can distinguish what we call individual dogs or birds or trees. That these are true individuals notwithstanding the fact that they have many parts with different functions is evident from their analogy to ourselves. Just as we are true individuals with various parts and functions all ordained to a higher activity which is the rational life, so they are true individuals with parts and functions ordained to one activity, which is the vegetative life in the tree and the animal life in the dog. Moreover, in the inorganic or non-living world there are many individuals. There are innumerable bodies clearly distinct from one another, such as lumps of coal and grains of sand. These are either single individuals or consist of many individuals. Here, as elsewhere, individuality must be judged according to independence and unity of action.

In our second question we ask whether the individuals which are found in the sensible world are all of the same kind or of various kinds. By kind we here mean specific substance, and so we must distinguish between what is substance and what is not. This distinction we can derive from our knowledge of ourselves. We are aware that in spite of the many sensible changes which are constantly occurring in us we are the same individuals that we were ten years ago. We are aware that there is one thing in us that most truly is, that is permanent, that is the subject of various changing realities which inhere in it, and that does not itself inhere in anything else as in a subject. This permanent reality in us we call our substance. The lesser realities which come and go, which change from moment to moment, from day to day, we call accidents. Substance is purely intelligible reality. It is not perceived by the senses except through its sensible accidents, as we know from the

fact that all our sensible aspects are subject to change, while the substance remains permanent. This distinction between substance and accident we extend to other individuals because, like ourselves, they are corporeal things, and because their changing accidents must have an ultimate subject in which to inhere.

That individuals in the sensible world differ accidentally is evident to the senses. Are they all alike in substance, or are there specific as well as numerical differences among them? To answer this question we must reason from the sensible accidents to the substance.

Each individual has a number of sensible accidents which it presents as a group to our observation. Some individuals are of the same type, having similar sensible accidents, while others are quite different. All have some sensible accidents which are at least relatively determined and stable, and these we call properties. The properties of some bodies are irreducibly different from those of other bodies, and the gap between them cannot be filled with individuals which differ only insensibly from one another. Hence we can recognize various abruptly distinct types of things in the sensible world.

For example, the properties of living organisms are abruptly distinct from those of non-living things. Organisms move themselves actively from within. They use their parts as instruments and move themselves by means of their parts. They nourish themselves, grow and reproduce. Non-living bodies do not do these things. Non-living bodies do not have immanent action, but living bodies do have immanent action. This is a property in the strict sense, because it is found in all living things and always in living things and only in living things.

Among living organisms some have properties that are abruptly distinct from those of other organisms. Animals, such as cats and dogs, perform activities which manifest

the presence of sensory consciousness in them, while plants, such as trees and grasses, do not show any evidence of having sensory consciousness. Human beings perform activities which manifest their rational life, while brute animals give no evidence of possessing the life of reason. These distinctions between plant, animal and man can be made also on the basis of morphological characteristics. Indeed, on this basis many other abruptly distinct and stable types of organisms can be recognized; for example, those which are systematically grouped as different classes of plants and animals. These morphological characteristics and the outward manifestations of sensory and rational life are not properties in the strict sense, but their frequent and regular occurrence shows that they partake of the nature of properties.

Again, among non-living things there are individuals with abruptly distinct properties, physical and chemical. Here also the sensible properties may not be properties in the strict sense. But taking them as they are—color, taste, odor, crystalline form, freezing point, boiling point, specific heat, specific gravity, characteristic spectrum, magnetism, molecular and atomic weight, atomic number, chemical affinity and valence—they are everywhere and always sufficient to distinguish abruptly different types of elements and compounds. Surely this is all that can be expected of sensible properties.

Now, these various types of individuals, inorganic and organic, are permanent in the sensible world. Notwithstanding the fact that all the individuals are subject to change, the types endure because new individuals of the various types are produced over and over again. This constant recurrence of individuals of definite types is a determined effect which requires a determined cause. Extrinsic or efficient causes alone do not suffice to explain it, because, while these are variable and changing, the sensible proper-

ties of each individual are stable and permanent, with that limited stability and permanence which belongs to sensible things. There must be a stable and permanent cause in each individual from which these properties proceed. This cause is the substance or essence of the individual. Hence the sensible properties manifest the nature of the substance. As a thing acts, so it is. Individuals with similar properties are similar in substance. But the sensible properties of some individuals are abruptly distinct from those of others. The only sufficient reason for this difference is that the essence or substance is different. Things which act differently are different. Things which have irreducibly different properties are essentially different. Hence there is a specific, or better, a generic difference between the living and the non-living. There are generic and specific differences among plants and animals, and specific differences between the chemical elements and between some at least of their compounds.

We now ask, does one kind of substance in the sensible world change into another kind of substance? Is there generation and corruption of physical substance? The very question is a scandal to thought and being, and perhaps because of this some thinkers have refused to recognize the occurrence of substantial change.

But if there were no substantial changes occurring in the world, every individual would be substantially incorruptible and would perpetually retain its sensible properties. This, however, is not what we discover when we examine the sensible world. We find that the sensible properties of many individuals disappear, and new sensible properties abruptly distinct from the old ones make their appearance. Living organisms cease to perform the activities which manifested their vegetative or sensory or rational life. Their remains show only the properties of the chemical elements and their compounds. These also undergo abrupt

changes. The sensible properties of the elements are profoundly changed when they combine chemically, and new properties appear in the compound. Again, the properties of the compound disappear when it is decomposed, and those of the elements reappear. Finally, we find that both living and non-living things lose their properties or at least their independence and become parts of other things when they are assimilated through the nutritive activities of living organisms.

The significance of these facts can be determined in the light of the principles which we have used above. We have seen that abruptly distinct sensible properties in different individuals manifest the presence of specifically distinct substances. The sensible properties of physical substances are found to change abruptly. The new and different properties manifest the presence of a new and different substance. In many instances we can be sure that there has not been a mere substitution of one substance for another, and we assume that the new substance does not come from nothing. It must, therefore, come from the old substance. Living things become non-living things, and non-living things become parts of living things. Elements become compounds, and compounds elements. These are substantial generations and corruptions in which one kind of physical substance becomes another kind of physical substance. The sensible world is, therefore, a theater in which substantial changes are constantly taking place. The kind of being which is found in the sensible world is being that is substantially changeable.

We shall now analyze the phenomenon of change in order to discover what is necessarily involved in it. As a typical example we shall take the instance of a green leaf that becomes yellow. This change is readily seen to involve three things: (1) A negative or privative starting point, which is the absence of yellow. If the leaf were already yellow,

it could not become so. (2) The end to which the change tends, which is the presence of yellow. (3) A potential subject which is capable of undergoing the change and which passes from the state of being not yellow to the state of being yellow. This analysis reveals that physical change is the passing of a potential subject from one state or condition to another. In such a change something—some form—which did not exist actually before the change, comes into actual existence. The absence or privation of the form to be produced is the starting point of change, and the actual existence of the new form is the end of change. Supposing, as we do, that this something new is not produced from absolutely nothing, that its coming into being is not creation strictly so called, there must be a potential subject in which or out of which the form is made, and which passes from term to term through the change. This potential subject is called matter.

From the above analysis it is evident that anything which is produced by change is composed of a potential principle which is matter and an actual principle which is form. Hence a substance which is produced by change is composed of two substantial principles, one potential and the other actual, one material and the other formal. These substantial principles are called prime matter and substantial form. When a substantial change takes place prime matter loses one substantial form and acquires another; that is, the substantial form which it had ceases to be actual and another substantial form becomes actual in it. But all substances in the sensible world are substantially changeable. Therefore all substances in the sensible world are composed of prime matter and substantial form.

Prime matter and substantial form together make one individual substance. Hence prime matter is an absolutely indeterminate and purely potential principle. Its potentiality is universal in the sense that any changeable sub-

stance can be made of it, and complete in the sense that it has of itself absolutely no actuality. This is clear from the fact that matter and form combine to make one substance with only one principle of action. In one thing with only one principle of action there is only one actual principle of being. If prime matter had even the least degree of actuality of itself, it could not combine with substantial form to produce one thing with only one principle of action *(ut quo)* and therefore of being. One thing with only one principle of action and being can be composed of two intrinsic principles only when one of them is purely potential and the other actual.

Since prime matter is purely potential reality, substantial form is absolutely the first substantial act by which it is determined in such a way that prime matter and substantial form together make one complete substance of a specifically determined kind. That prime matter and substantial form are the ultimate principles of material substance and cannot be further resolved into other principles is evident from the fact that prime matter is pure and indeterminate potency and substantial form is its first determination or act. That prime matter and substantial form are really distinct from one another is evident from their separability. Although prime matter cannot exist without some form, it can lose one form and acquire another. Thus we find that the substance of this sensible world is composed of two ultimate principles really distinct from one another, prime matter, which is pure potency, and substantial form, which is its first act.

To this reasoning many objections have been made both in ancient and modern times. We shall take note here of only a few which are based directly on experience and which touch essential points in our argument.

First in importance is the objection that the distinction between the living and the non-living cannot be maintained.

This distinction has been made on the basis of immanent action. Now, it is argued that immanent action is found also in non-living things. The chemical elements and compounds are know to be complex structures with many parts, some if not all of which are in motion. Electrons, for example, seem to move about the nucleus of the atom, and occasionally jump from one orbit to another. Hence immanent action occurs in all bodies and is not peculiar to living things.

In reply to this objection it can be said that motion is a common accident of material things and may be found both in the living and the non-living and in any of their parts. It is not motion as such that characterizes vital action but motion that proceeds actively from within the thing that moves, in such a way that the individual moves itself by means of its parts. In this way we move ourselves when we rise and walk, and all living organisms manifestly move themselves with various kinds of movement. This is possible because the living organism is accidentally heterogeneous, not only quantitatively but also qualitatively. Its various parts are the seats of different vital potencies and different chemical and physical qualities held in labile equilibrium, so that the energy required by the organism to move one part can be derived by it from another part of itself.

On the other hand the chemical elements and compounds are also complex structures possessing quantitative heterogeneity. But with regard to their chemical qualities they are in stable internal equilibrium, and therefore are utterly unable to move themselves. The movements of their parts are not caused actively from within but mechanically from without. Once started they persist uniformly, and are not changed except under the influence of some extrinsic agent. Hence non-living things do not possess that immanent action which is characteristic of living things.

An objection is made against the occurrence of substantial change during chemical reactions on the ground that the elements remain in the compound. This is evident not only from the fact that they can be recovered the same in kind and quantity after the compound has been decomposed, but also from the fact that their presence in the compound can be detected by means of their X-ray spectra.

That the elements somehow remain in the compound must be granted, but the question is, precisely how? Certainly they are not in the same condition in the compound as they are when free. Their chemical properties are profoundly modified, and in addition the compound has properties characteristic of itself. If the elements remain formally in the compound they are in an unnatural and violent state, because they are so bound together that they cannot manifest their characteristic chemical properties. Moreover, if the compound is merely the sum of the elements which compose it, there is no reason for the appearance of new and different properties. Finally, if the elements remain formally in the compound, then the compound is not an individual with a single principle of action and being.

But the unity of the compound is manifest. It has a clearly defined group of consistent properties which distinguishes it from all other things and which belongs to it as a whole. It, therefore, has one principle of action and one actual principle of being. Consequently the substantial forms of the elements are not present actually. But the elements are present in some way. Their whole quantity and their typical figure are present, not, indeed, numerically but specifically the same, and their chemical properties are present though altered in intensity by the reaction which terminated in the internal equilibrium of the compound. Let us say that the elements are virtually present in the compound, that is, by virtue of the substantial form of the compound. The fact that the compound has parts

which are quantitatively different yet similar to the configurations of the elements seems sufficient to explain all that is known about the presence and behavior of the elements in it, and suffices also to explain how the elements can be derived from the compound. The decomposing agent restores the properties of the elements to their primitive intensity and thus disturbs the internal equilibrium of the compound. The quantitative heterogeneity offers vulnerable points or planes of cleavage, and the elements are regenerated, thus corrupting or decomposing the compound.

Finally, against the unity of atoms and compounds alike, it is objected that they are all composed of discrete particles: electrons, protons, nutrons, positrons, and perhaps many others.

In reply it must be conceded that atoms as well as compounds possess a complex structure with quantitatively heterogeneous parts. Electrons and protons are definite structures which appear to be separated from each other within the internal space of the atom. But there is more than mere distance between them. There is a field of force, as it is frequently called, which is extended, which is movable with the atom, and which pertains to the atom as truly as do the electrons and protons. The protons and electrons appear to be the denser portions of the atom, while the field between them appears to be highly rarefied. In any case, the atom is a quantitatively continuous whole, as we know from the fact that the atom is, when free, one individual physical substance, whose parts are in internal equilibrium and are held together, not by accidental forces, but by substantial cohesion which extends, not through space that contains absolutely nothing, but through the continuous quantity of the whole.

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EMERGENT EVOLUTION OF C. LLOYD MORGAN AND J. C. SMUTS

I.

AT an early date in our century, anyone reading such a book as Gerard's *Old Riddle and the Newest Answer* (Longmans, 1904), however fascinated by the Evolutionary Hypothesis, would have encountered several gaps in the upward sweep of the evolutionary curve. Thus there was a hiatus between the non-living and the living, another between the animal and rational minds. In so far as the later, at least at these points, represented more and more-perfect reality than the earlier less and less-perfect reality, two courses were open. Committed to the "Law of Continuity," the materialist gave a mechanistic interpretation of life and in due course produced a materialistic psychology, thus closing the gaps; on the other hand, some Theists, insisting on the impossibility of the origin of the greater from the less and equally on the higher and more perfect reality in ascending order of Matter, Life and Mind, saw in such a discontinuous evolutionary process itself an unassailable argument for the existence of God. Matter was inert and passive, while in contrast the living was characterized by self-activity. Matter was impenetrable, and in opposition mind was inclusive. Life could not originate in matter. Hence an insertion into the universe by an extra-mundane cause was required to explain the origin of life. Then twentieth century physics revolutionized the concept of matter. Matter is naught but massed energy; activity is the universal substrate of things. Atoms, no less than cells, are active energy systems. Thanks to the New Physics, Matter and Life are recognized as fraternal twins, and the continuity of evolution is safe. The specific difference of Emergent Evolution is, in the first place, that, instead of attempting

the mechanistic explanation of life, it rather applies the categories of organization and organism to matter itself. It undertakes to reform the fundamental concepts of Matter, Life and Mind by breaking down the assumed impassable gulfs between them. It further diverges from Scientific Materialism in so far as the latter denies the creative plasticity of nature, insisting that the evolutionary process is no mere re-shuffling or re-combination: The emergently new is not 1 plus 1 plus 1 plus 1, but 1 plus 1 plus 1 plus 1 plus x. Nor is evolution an unfolding of what is present potentially from the beginning. Anything like *"seminariæ rationes"* is excluded. The contention of the Emergent Evolutionists is precisely this, that evolving nature really creates, within the bosom of the old, new entities which have neither explicit nor implicit existence in the beginning. Epigenesis implies something that is not only resultant, but emergent as well, an emergent step, more or less saltatory, "a qualitative change in direction, a critical turning point, in the course of events" (C. Lloyd Morgan, *Emergent Evolution*—hereafter EE—p. 5). It must be added that attempting to remain wholly within the framework of science, Emergent Evolution is intolerant of vital principle, entelechy and soul, intruders from an alien shore.

The scheme of things may be represented in pyramidal form (EE, p. 11). At the base and extending throughout Mr. S. Alexander's pyramid is Space-Time. In Alexander's scheme such spatio-temporal relatedness is (1) capable of existence apart from "physical events" and (2) effective. Mr. C. Lloyd Morgan differs from Mr. Alexander and assumes a physical universe in which space-time relatedness is ubiquitous, but such relatedness is not effective as a cause. At the base of the pyramid and throughout for General J. C. Smuts (*Holism and Evolution*—hereafter HE—p. 326) is Action. As already noted, matter is but massed energy and activity is the fundamental character of the universe.

But action is in the space-time continuum. It is necessarily structural (Einsteinian space is curved). The dead-weight of matter's utter passivity having yielded to a new concept, a great partition in knowledge having fallen, Matter, Life and Mind are no longer to be conceived as disparate orders of being. Emergence is possible. Within the pyramid, the form indicating the increasingly smaller number of organisms and minds in order, new kinds of relatedness supervene with consequent changes in the go of events. When in the course of evolution first life and then mind emerged, a special insertion *ab extra* was not required. Just such "alien influx into nature" Emergent Evolution excludes. On the level of life, not entelechy, but new relatedness of lower events, is all that is needed. The emergent is a new quality due to a new relatedness. Space-Time events and relatedness must be substituted for prime matter and substantial form. When, indeed, Life and Mind do come on the scene, their appearance is from within the scheme, for it is never a question of more or less reality in the emergents, but one of "increasing complexity in integral systems as new kinds of relatedness are successively supervenient" (EE, p. 203). Smuts puts the difference between the non-living and the living in "intensity" of relatedness (HE, p. 134). However expressed, all Emergent Evolutionists make the difference between Matter, Life, and Mind a difference of degree, not of kind. This reversal of the common sense judgment is justified by the change in the contemporary outlook from fixity toward fiuidity. The Hegira of the Philosophy of Emergence is fixed by three names and three dates: Darwin, Becquerel, Einstein; 1859, 1896, 1915. And perhaps Radioactivity, though itself a process of devolution, the hope of alchemy come true, is most suggestive of Emergence. The Mystery of Life, it is thought, will be solved in Carbon (Jeans, *Mysterious Universe,* p. 10). Two other terms, Involution and Dependence, all pervasive within the pyra-

mid, require attention. Morgan assumes a third, Correlation, that is the universal correlation of mind and matter on all levels, this "under acknowledgment" or as beyond proof or disproof; but for this Smuts scotches him; Mind is recent, not at the beginning (HE, p. 321). Space-time events (which I compare with *causa materialis*) pervade the pyramid from bottom to top, or we may put it, there is no mind without matter; matter is involved in mind. The New Physics has supplied the common denominator. On every level of emergence there is new relatedness (which I liken to *causa formalis*) with a dependent redirection in the go of events (EE, p. 206). Such "specific gotogetherness may be regarded as the substance of that system in its entirety" (EE, p. 192). On these premises, does Morgan mean what he says when he states that at any given level within the pyramid there is an inflow into nature of that which belongs of right to a disparate order of being (EE, p. 204)? Are disparate orders of being really disparate? If so, in Arnold Lunn's homely phrase, is the Emergent Evolutionist getting plus out of minus?

Those who are in the Scholastic tradition answer in the affirmative: The Philosophy of Emergence is getting Intussusception out of Juxtaposition, Immanent Activity out of Transitive Activity. Whether we have in mind metabolism going on in all living things or knowledge in animals and men, the living agent, in varying degrees of intussusception, achieves the alien and foreign to itself within itself while remaining itself. There is naught like it below the level of life. Yet Emergent Evolutionists hold that this does not establish conclusively that Matter, Life and Mind are essentially disparate orders of reality, because the properties and possibilities of matter are not fully known, because blind entelechy certainly cannot explain such phenomena as regeneration and compensation for unforseen deviations, and because among other things the notion of

entelechy is sterile for the scientist. Now, in as much as any agent energizes only in the measure of its being, the operative order is not only a key to the understanding of the entitative order, but it cannot exceed it. Transitive activities, characteristic of the non-living, beginning in but not perfective of the agent, obviously are zero with respect of immanent activities, characteristic of the living, which both begin in and are perfective of the agents concerned. When there is insistence that agents do not necessarily act up to the limit of their being and that all the properties of matter are not understood, to this we can and must reply: True, we do not know exhaustively what matter can do; what we do know is that diametrically opposite activities (and such are transitive and immanent activity) cannot specify and characterize one entitative order of reality unless one is prepared to say that A is at once A and non-A, that a level of reality is identical with itself and its very opposite. On such analysis the emergence of life by new relatedness of old events is the production of plus out of minus.

Mr. Morgan quite agrees with Mr. B. Russell in the latter's *Analysis of Mind,* that body and brain are necessary, but not sufficient (EE, p. 285). Mr. Morgan's analysis is incomplete, for he misses the further problem whether organ is necessary for mind by way of extrinsic or by way of intrinsic dependence, whether organ is necessary for embodied mind as a *conditio sine qua non* or as itself involved in mind. For the Emergent Evolutionist throughout the pyramid the higher involves in its very substance or "gotogetherness" the lower. For Alexander, Morgan and Smuts alike the involution of Space-Time Events in Mind is intrinsic. But if introspective analysis reveals mental products in a real sense "*supra spatium*" and "*supra tempus,*" then mind and space-time events are on disparate levels of reality. No more than a man can reach beyond the span of

his outstretched physical being, is that which functions in a space-time continuum capable of producing a product supra-spatial and supra-temporal. Even such are Concepts. General Smuts is not annoyed by the charge that the philosophy of the Emergent Evolutionist is a "bloodless turnip philosophy." The equation between cause and effect, Smuts is content to believe, was a nineteenth century dogma (HE, p. 9). The fallacies of abstraction and generalization produced sharp contours. It is not events or substances which alone are causative; "the intermingling of fields is causative in nature" (HE, p. 18). On inquiry it is learned that the field of matter is the curved structure of real space-time (HE, p. 31) and furthermore that these curves are real and causal, determining the course of primal Action. The involution of space-time events in mind must be stressed for the purpose of criticism. Throughout the pyramid energy operates within the time-space framework. The mind itself is supposed to be such space-time events in most intimate synthesis. But ideas, supraspatial and abstract, are outside of that framework. Principles and products cannot be utterly incommensurate. The space-time "field" is just no use. Of course there is extrinsic dependence of Mind and Matter. "Human intelligence . . . does require a body, it is true, but not because the body is the organism by which the intellect functions. Rather it is because the intellect operates on material things" (Sheen, *Philosophy of Science,* p. 112). One harkens back a good bit to the time when it was learned that the proper object of the intellect is the essence of material things. General Smuts uses the axiom: *Ex nihilo nihil fit.* General Smuts knows that it is a principle of thought as well as of nature (HE, p. 128).

The reader of *Holism and Evolution* sees unfurled a panorama of current science. *Emergent Evolution* is a different study; it is introspective, analytical. Of ten lectures five bear the titles: Mental and Non-Mental, Reference,

Memory, Images, Vision and Contact. Morgan's description of the genesis of reflective reference, involving the simultaneous presence of the terms referable (EE, p. 93) from non-reflective, perceptual reference, involving neural centers, connections, radiations of energy, memories and feelings, processes which are successive, leaves one with the suspicion of the epigenesis of the Simultaneous in the bosom of the Successive. General Smuts at times is a prestidigitator. It is difficult to avoid the charge of attempted caricature. In the description of the origin of the mental from the non-mental (HE, p. 225) we go by these steps: 1, tension of body in disequilibrium; 2, discomfort (first surreptitious introduction *ex nihilo*); 3, the body does not remain passive but becomes active in ad-tension; 4, the metamorphosis of ad-tention into attention (second surreptitous introduction *ex nihilo*). Likewise "otherness becomes selfishness," "necessity is transformed into self-determination" (HE, p. 138), the processes bear the geneticist's label "mutation." Refuge cannot be taken in more intimate relatedness of the old stuff where diametrical opposites characterize the new. Of an evening on the terrace before Cairo's Continental Hotel, fakirs, amusing guests, pull many a rabbit out of an empty sleeve. No one is duped. *Ex nihilo nihil fit!* In the Emergent Evolutionist's pyramid the old is zero in respect of the new.

II.

Formal cause, intrinsic coefficient of finite reality, has gone out of the window. Final cause follows unless, indeed, in Mr. Morgan's phrase, it be accepted "under acknowledgment," *i. e.*, as beyond proof or disproof. In monistic schemes one does not need to wait to be told that Teleology is an anthropomorphism. There is not Purpose, but Trend (HE, p. 343). Action is "the physical stuff of the Universe": *"Im Anfang war die That."* Relativity is the me-

dium for action. Hence Action is structural. "Matter is creative of structure as Mind is creative of Value" (HE, p. 6). Smuts likes Holistic Trend better than Nisus as in Alexander. In the pyramid drop a perpendicular from apex to base. Trend or Nisus is upward along this line. The Holistic or Whole-making Trend must not be understood to be just an idea, merely a generalization from facts; it is a "seminal principle" as well, a synthetic, organizing, ordering, regulating activity (HE, p. 321). Smuts describes Holism as the "groundwork" of physical nature (HE, p. 107). The implication that Holism is of Action *per se et secundum quod ipsum* suggests how opposite a study of the contingency of the laws of nature would be. (Garrigou-Lagrange, *God: His Existence and His Nature,* Vol. I, pp. 356-60.) The Holistic trend, we are assured, is not general, but specific: "Holism is a specific tendency . . ." (HE, p. 100). But by what is the general specific? Smuts confesses that he fails to see how Bergson (HE, pp. 92-5) gets heterogeneous multiplicity out of homogeneous duration. Bergson, Smuts admits, "infects" duration with Intellect, but he is quick in pointing out that Intellect, though practical, selective, purposive, is nevertheless not creative. Is it a case: *"incidit in foveam quam fecit?"* Do not, however, also in Smuts the manifold and different come from the homogeneous? Holism is a groundwork. There are still other inconsistencies. Holism is truly creative, but at the same time the organism carries "the still unrealized future" which certainly implies potentiality and evolution as explication. Again, Purpose is excluded, but in a rhapsodic moment the Universe has "an immanent Telos" (HE, p. 179), which, if it means anything, means end, the ultimate *in ordine executionis,* but the first *in ordine intentionis.* Sometimes there is almost a "psyche" in a cell (HE, p. 77) or a strong temptation to ascribe the activities of organism to an inner mentality. Mind, however, is a later arrival.

Or "the whole (*i. e.*, the parts in intimate relation, for there is naught but parts and relatedness) takes long views, both into the future and into the past; and mere considerations of present utility do not weigh heavily with it" (HE, p. 213). What "takes long views?" Is it Mind? Holism is "the presiding genius" of Evolutionary advance (HE, p. 332), it synthesizes Variation and Heredity, but Smuts dislikes hypostatizing. Smuts does like Holism because it is factual, keeps close to reality, is the very ascertainable character of the evolutionary process, and as such, on allegation, disposes of the necessity of "some mystic assumed Pre-established Harmony." The positivistic, fact-finding temper is excellent in its place, but fact and interpretation are different. Smuts proposes Holism as explanatory, but as a matter of fact he is only attempting to palm off description as explanation. Professor Morgan knows better. Quoting T. H. Huxley, Morgan bids us to be in steady remembrance "that evolution is not an explanation of the cosmic process but merely a generalized statement of the method and results of that process" (EE, p. 206).

Smuts rejects as futile the attempt of Mechanists at explaining order. "The pure chance presupposed by Mechanists," he says, "has never ruled the world" (HE, p. 141). There has never been a sorting out of possibilities; the dice are loaded against it. What then? For final cause, requiring mind, if final cause is to be a true principle of orientation, Holism substitutes variability, adventitious modification, survival-value, heredity. Not Wholes alone shape the evolutionary process, but Fields as well. The biological field is Ecology. Even the unrealized future is part of this "*vera causa.*" The past, the present, the future meet in the cell, "that little wayside station on the infinite trail of life" (HE, p. 114). In fact "the pull of the future" is almost as effective as the push of the past (phylogeny). The organism, in continuous "autogenesis," points toward the future,

"not only as general orientation of future development, but more specially as the realization of the potentialities which it holds as the seeds of the future" (HE, p. 115). At the bottom of it all "time integrated with space is active and creative and productive of reality" (HE, p. 111). Since the Future is not real, can we escape the suspicion that the General is casting a furtive glance toward Mind as the intentional and orientating factor? The "general orientation" of which the Future is the principle, does not help us at all. The functional mechanisms which are are very specific mechanisms. Unless somehow the end-result of any function, namely the achieved perfection, is in the mechanism, unless the eye is *ordained* for seeing, there is no sufficient reason why an eye should see rather than hear, there is no sufficient reason for the congruity and suitableness of the end-result. If agents, without definite tendencies, are indifferent themselves to all effects, there is no sufficient reason why they should act at all. *"Potentia dicitur ad actum."* (Garrigou-Lagrange, *op. cit.*, pp. 352-72.) When reason comes into contact with the intelligible in things, says Pere Garrigou-Lagrange, it cannot help seeing it. Common sense or spontaneous reason looks for the sufficient reason of things. Such a sufficient reason Smuts does not offer.

This writer gets the impression that for Smuts Survival-Value and Heredity, substituted for final cause, are a kind of connective tissue among the factors operating in a co-ordinated function. Let us consider the arrival of the several modifications possessing survival value whose functioning is prerequisite for such an indivisible act as that of vision. Thirteen conditions, it is said, must be fulfilled before vision becomes possible. The number of conditions does not matter. Smuts, of course, rejects "fortuitous concourse"; he would not entertain for a second the suggestion of a "series of coincident accidents." Now it is plain, if there is any survival-value in the modifications, that they must

come, *not singly, but in squads and platoons.* Smuts is well aware of this. He clearly states that "the organism *as a whole* is on the march" (HE, p. 211). The evolutionary advance is, so to say, on a *holistic* front. Common sense inquires why the advance is along a whole front. The question must embarrass the advocate of trend without purpose. The General should squirm, but a soldier does not squirm. Instead he gives an answer in Greek: The advance is along a whole front because it is an holistic advance. A child once explained that green leaves are green because they contain "chlorophyll," and exulted in its knowledge. Whereupon an old student of Greek smiled not unkindly, for it was the answer of a child. "Chlorophyll" has a rival—Holism! Holism turns out to be an explanation of a thing by itself. It is a glorified tautology. Emergent Evolution, rejecting formal cause, tries to get the more perfect from the less perfect. It cannot work. At least one Emergent Evolutionist, when final cause is rejected by him, confounds description with explanation. In this fashion General Smuts would dispense with another of Aristotle's four causes, the extrinsic final cause. Enough has been indicated to show that no amount of fact-finding about immanent trends really offers a sufficient reason why these trends follow the certain directions which they do.

III.

"There is universal agreement," says General Smuts (HE, p. 342), "with the well known argument of Kant, that from the facts of Nature no inference of God is justified." How little Scholastic Philosophy is understood by Smuts may be gathered from his misconception of the process of abstraction (HE, p. 15), from his statement that the Schoolmen "attributed reality to universals instead of to concrete particulars" (p. 20), from his delight in having found the concept of incomplete substance (p. 109), from his assumption

that his concept of "field" provides a bridge for the passage of change between things (pp.112-13), from his utter misunderstanding of the phrase "*ex nihilo*" in connection with creation (p. 128). The recently published correspondence between J. B. S. Haldane (Haldane has read in St. Thomas) and Arnold Lunn reveals the former in confusion concerning the indefinite and the actually infinite and missing the point that the metaphysical arguments for the existence of God do not pivot on the impossibility of infinite regress. Certainly St. Thomas taught the possibility of the eternally dependent. Haldane, missing the point, is better than Smuts uncritically accepting the Kantian Critique. These men are certainly outside the Great Tradition. Like J. S. Mill, who argued the necessary character of matter and force because they "are not known to us as beginning to exist," Smuts starts from Activity and Holism apparently without adverting that there can be question concerning their character as contingent or necessary. A less crude Materialist, Smuts, at least philosophically, is an atheist. Allowance he makes, it is true, that behind the present universe of action there may be an infinite regress in celestial evolution and that the Universe today may be "the evolved result" of inconceivable prior developments (HE, p. 326), but he pauses only for the truism that it would be futile to write the history of pre-history. The universal attributes of "space-time events" are ignored by the soldier-statesman-philosopher. Once he recognizes the incompleteness of his argument (HE, p. 339), which really is not explanation but description, by which miss or confusion, as already noted, he certainly is less satisfactory than Morgan or Huxley, who understood that Evolution is descriptive, not ultimately explanatory, of a process.

How, then, does Smuts strive for completeness? By the "Whole of wholes," if there be one. Nature is not a mere collection; it is rather "wholes with interlocking fields"

(HE, p. 340); nature, in the collective sense, is organic. Trend in Nature does not spell Transcendent Mind; Holism is supposed to take care of that. Nevertheless, Nature itself is not God; God is always just beyond the present stage of the evolving universe. The notion is not unfamiliar; God is the "something higher as yet unattained" (EE, p. 31); a colleague calls such a deity "God just around the corner." Such a notion does violence to language: that which is not and never will be is the opposite of Him who declares His nature by His existence, Who is not kind nor degree of being, but Being Itself, the *Ipsum Esse per Se Subsistens*. Because each emergent is something new and unpredictable, Smuts contends, Agnosticism is the only logical thing. "To call such a new Transcedent Whole by the same language as human personality is to abuse language and violate thought alike" (HE, p. 342). Perhaps Smuts in a moment of mystical exaltation may be able reverently to acknowledge that which will be, but is not, that which, if it were, would cease to be God, the eternally expected non-existent and unknown!

Committed to the "Law of Continuity" in his interpretation of the rising evolutionary curve, as are all Emergent Evolutionists, Morgan also bars insertion *ab extra* into the pyramid at all levels of emergence, including the levels of life and mind. A Theism, as Scholastic Philosophers know, which is built on the necessity of influx from without at the evolutionary gaps, is no part of the fundamental argument for God's existence and of a type against which certain theistic scientists have warned. Morgan follows down the line of involution within the pyramid and accepts "under acknowledgment" as his lower "limiting concept" the existence of the Physical World in its own right, *i. e.*, as a mind-independent fact (EE, p. 33, p. 116). Stressing acceptance under acknowledgment or as beyond proof or disproof, Morgan probably is speaking as one who restricts the knowl-

edge of the scientist to phenomena and relationships. Substance, of course, is outside of Phenomenalism. "Ultimate Dependence" is Morgan's other limiting concept by which "emergent evolution is explained, not merely interpreted" (EE, p. 33). Mr. Morgan's designation of Deity as "Ultimate Dependence" seems to confound the Conditioned with the Absolute. Smuts has tried to construct a complete philosophy of nature by a synthesis of the natural sciences. Morgan constructs a philosophy to supplement science. He is concerned with ultimate extrinsic causes which are the philosopher's concern. Viewing the pyramid which Morgan as scientist has constructed, Morgan as philosopher asks the question: "Of what relating activity is the given relatedness (on each new level of emergence) a manifestation?" Morgan says there are three answers: Some say "*Ignoramus et ignorabimus,*" others say there is no transcendent relating activity, and some "take the risk of acknowledgment." The fourth class, that of Theists on intellectual grounds, Morgan ignores in his division. And so it will appear: Morgan is a Theist, but on non-intellectual grounds. Dependence urges Morgan "upwards toward God, as Directive Activity within a scheme which aims at constructive consistency" (EE, p. 33). Granting that ultimate causes, in like manner with such concepts as entelechy and soul, are quite useless to the scientist for purpose of naturalistic explanation, Morgan insists that the go of things from start to finish within the pyramid is inexplicable without an Ultimate Cause (EE, p. 206). The more he contemplates the rising curve of evolution presenting " 'the apparent paradox' that the emergently new is incompatible in 'substance' with the previous course of events," the more he understands the continuous redirection of the course of events at each new level within the pyramid, the more loyal his grasp that Evolution is not cosmic explanation, but "a generalized statement of the method . . . of that process," in

that degree Morgan is impelled to supplement descriptive interpretation by explanation. In similar vein he quotes Bergson: "Philosophy ought to follow science in order to superimpose on scientific truth a knowledge of another kind which may be called metaphysical" (EE, p. 116). Hope runs high. Will Morgan penetrate to the intelligibility of things? Will Morgan discover the hard-as-rock realism of Metaphysics? Will he find Causality at the heart and center of the Dynamic World or will he go the way of Smuts and of other uncritical critics who *a priori* accept *a priori* forms? Science, according to Prof. Morgan, does not bar "causation," *i. e.*, "the total goingness of any given system," capable, we take it, of expression in suitable equations; but Science does bar causality "in the sense of that which makes events go as they do go" because the latter is useless to the scientist and beyond observation (EE, pp. 288-90). Nevertheless Morgan accepts, though beyond scientific proof or disproof, Causality with a capital "c". The position is that of the Anti-Intellectualist.

How then does Morgan come to the "something more" in the heart of events, the more than causation which is Causality, the more than depedence which he capitalizes as Dependence? "Within us . . . we must *feel* the urge . . . which will be the basis upon which the acknowledgment of Activity *(Actus Purus)* is founded" (EE, p. 208). "Unless we intuitively enjoy His Activity within us . . . we can have no immediate knowledge of God as the Source of our own existence and of Emergent Evolution" (EE, p. 301). "I acknowledge God Who is, I contend, beyond disproof . . . There is pragmatic endorsement of that which is offered for creedal acceptance" (EE, p. 61). The Theism of Mr. Morgan turns out to be Mysticism, Pragmatism and Vital Immanence! Yearnings come and go. There are times when the tired traveler would not leave his room to view a hundred Taj Mahals. The ebb and flow of feeling is the fall and

rise of God. A shrug of the shoulders may greet the "as if" philosophy of the Pragmatist. The point is that men can not be serious about uncertainties. And yet, if there is a God, what else is so consequential? To those who are outside the Great Tradition, Scholastic Philosophy, which is sure that man can have the certainties necessary for life, adopts the words of Christ to the disciples of the Baptist: "Come and see" (John 1/39). A spirit of true and broad experimentalism urges upon scientist-philosophers a delving study into the philosophy of Aristotle and Aquinas. The isolation of this philosophy which offers certainties on rational grounds proportionate to man's rational nature is not only unfortunate, but tragic. *Et Philosophia Perennis sui-diffusiva esse debet!*

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SOME METAPHYSICAL PREPOSSESSIONS OF MODERN PSYCHOLOGY

IT is by no means the purpose of this paper to disparage the achievements of modern psychology. Far be it from any philosopher, worthy of the name, to withhold his appreciation from a Wundt, a Titchener, a James, a Watson, a Freud, a Koffka, and a Kœhler. It would be both foolish and unjust to ignore the definite acquisitions to the science that these psychologists have to their credit.

Despite, however, one's appreciation of past achievements, despite one's sincere intention to escape underestimation, it is difficult to avoid the impression that the present confusion makes a sorry showing. System after system crosses the threshold of this lively, young science; each has a vast respect for science, and displays an arrogant intolerance toward the prescientific psychological interpretations of older days. The difficulty, however, is that each

gives its "own" interpretation of the facts that arrest his attention and that they are very often more or less at odds with one another.

A pessimistic interpretation of this fact would be that the attempt to make psychology a science in the modern meaning of the term has failed; yes, must fail, because the task is by its very nature an impossible one. However, such a doctrine of despair could not be accepted already for the simple reason that modern psychology is young and that, notwithstanding its youth, it can boast of many achievements.

What, then, is the reason for the present confusion in modern psychology?

No science is called upon—or qualified—to pronounce on the ultimate nature of its data. Eventually, every natural science arrives at facts and relations which it cannot explain and which it does not even attempt to explain. This ultimate explanation is the task of the Philosopher.

As an empirical science modern psychology is in the same situation. It can, therefore, abstain from any search into the ultimate causes of our conscious life. However, a great many modern writers, while professing to refrain from the discussion of philosophical questions, settle them *a priori* by making unwarranted metaphysical assumptions.

Burtt points out[1] that some scientific investigators have, perhaps unconsciously, their private uncritical prepossessions which affect the interpretation of their experimental data. He reduces these preconceived, unwarranted assumptions to three sources: first, the ideas of his age on ultimate questions, so far as such ideas do not run counter to his interest or awaken his criticism; secondly, his method: he will be under a strong and constant temptation to make a metaphysics out of his method, that is, to suppose the universe

[1] Burtt, *The Metaphysical Foundations of Modern Physical Science*, p. 226.

ultimately of such a sort that his method must be appropriate and successful. Finally, his rigorous extra-scientific interests such as religion.

William James rightly remarks:[2] "Metaphysics, fragmentary, irresponsible and half awake, and unconscious that she is metaphysical, spoils two good things when she injects herself into a natural science."

It is our contention that metaphysical prepossessions, derived from these three sources, have had a great influence in modern psychology and are the cause of its present confusion.

We will consider first the unwarranted assumptions concerning method: The repudiation of one or more methods of attaining knowledge, along with the rejection of points of view and a preference for its own speciality, is without doubt a general academic sin today. This so-called fallacy of uniform method of science had also its profoundest influence in modern psychology. It is common-place that Behaviorism and Psycho-Analysis are doctrines which developed out of methods. Let us consider by way of illustration, Behaviorism.

Watson and his behavioristic psychology has performed a wonderful work in studying the responsive behavior of animals to *stimuli;* he has called attention to the importance of the first years of a child's life; his experiments on babies have had an influence in the education of small children, and the fact is that now education pays more attention to the child's formative years.

Since Dr. Watson experimentally exposed many extravagant theories of Introspectionists or Structuralists, they are now more careful in stating their opinions. Dr. Furfey rightly remarks:[3] "Psychology would be worse off were it

[2] James, *Principles of Psychology,* Vol. I, Preface, p. VI.

[3] Furfey, "Psycho-analysis, Behaviorism, and the Gestalt", *Thought* (Sept., 1929), p. 247.

not for a few men like Watson who take a peculiar pleasure in criticizing the poor experimental work of others."

Unfortunately, however, Watson's success with the objective method of procedure in studying animal behavior, and his severe, but very often just, criticism of the introspective procedure of the Structuralists, led to a repudiation of the primary source of psychology, of self-observation, particularly self-observation under controlled conditions, and psychology became a science of behavior with the exclusion, yes, even denial, of consciousness. This *a priori* repudiation of introspection and consciousness from the field of psychology has given American psychology in particular a terrific setback.

The Behaviorist proposes to observe, to predict and to control the behavior of the organism "as a whole," but the chosen method limits them to the observation of muscular contraction and glandular secretion. The reactions of the human organism "as a whole" cannot be fully understood and certainly not predicted and controlled unless we obtain introspections from the subject. Even though Watson argued that an analysis of inner experience cannot furnish us with trustworthy material for scientific study because our mental content is so vague and transitory and especially because it alters the very moment we turn our attention upon it, nevertheless, this introspective analysis is the only way when one wishes to penetrate into the real causes of our behavior. The objective method alone is not even adequate for animal psychology, for the proper starting point in the interpretation of animal behavior is the conscious antecedents of our *own* behavior: we infer by analogy that they have similar experiences.

Finally, a science of behavior with the exclusion of consciousness is absurd. Consciousness is a fact which must be admitted before *any* observation and control of behavior can be discussed. There is no observation and control of

behavior of any kind save through consciousness, for it is only through this very consciousness that we are aware of the results of our observations and experiments.

"The Behaviorist," says Dr. Furfey,[4] "is like an astronomer studying a star through a giant telescope, who should admit that the star existed but deny the telescope. He is like a man reading from a book, who should admit the things he read but deny the existence of the book." It is, therefore, manifest that Dr. Watson and his school made a metaphysics out of his method: his materialistic philosophy imposed a limitation of method which is entirely arbitrary and absurd.

The second source of unwarranted assumptions, smuggled into the field of empirical science, and in our case into modern psychology, are the ideas of the age on ultimate questions. As a first instance we will take one of the oldest and most important problems of psychology: the distinction between sense images and ideas, between sense data and thought objects. In the prescientific or so-called old-fashioned psychology we find two solutions of this problem, diametrically opposed to each other. The Aristotelian-Thomasian psychologists maintained that ideas are not images but that they are really and essentially distinct from each other. The second solution was offered by the Sensationalists in the 17th and 18th centuries, by Hobbes, Hume, etc. They held that ideas are not essentially distinct from sense images, the difference being only one of complexity. The importance of the problem is manifest, for the position the philosophers adopt towards this problem corresponds strictly with the answers they have given to the problem of human nature.

What, now, was the procedure of the modern psychologist in solving this problem? Let us consider the most aristo-

[4] *op. cit.*, p. 246.

cratic group of all of them, I mean the so-called trained Introspectionalists under the leadership of Edward Bradford Titchener. Titchener tells his students that if we take "a thought consciousness, our mind as it is when we are arguing something out, and analyze it, we find that it reduces to a number of quite simple processes, all of the same general kind or class. These are called 'sensations.' The sensation, then, is the structural unit or structural element of these consciousnesses."[5] For the experimental investigation of perception the student was given a threefold task: "the analysis of the constituent sensations; the tracing of the pattern, the mode of connection imposed upon them; and the discovery of the substitutions and short cuts that have obscured the original formation."[6]

It is manifest from this quotation that the sensationalistic account of our ideas, which holds that sensations are the structural units of our whole conscious life, even of the most abstract thought, was *"a priori"* assumed. The student was told beforehand what he had to find in his psycho-analysis of thought processes and perception. He had to find, in final analysis, sensations, because they are the structural units of our whole conscious life.

No wonder that Watson ridiculed the work of these trained Introspectionalists and that he lost all appreciation for introspection. No wonder that he thought that the thirty odd barren years since the establishment of Wundt's laboratory had proved beyond a doubt that the Introspective School was founded upon a wrong hypothesis. Watson was perfectly correct in saying that we are getting nowhere with such methods. The difficulty, however, does not lie with the introspective method as such, but with the unwarranted assumption concerning the nature of sensations

[5] Titchener, *Experimental Psychology*, Part I, Students' Manual, p. 1.

[6] *op. cit.*, p. 128.

and thought processes derived *a priori* from Sensationalism. For, as James remarks: "When these assumptions have once established themselves (as they have a way of doing in our very descriptions of the phenomenal facts) it is almost impossible to get rid of them afterwards or to make anyone see that they are no essential feature of the subject."[7]

Another metaphysical prepossession which has great consequences in modern psychology is the attempt to resolve the intellectual perception of the Ego into analyzed kinesthetic sensations or to explain it away. Scientific psychology demands that mental phenomena, *i. e.*, sensations, ideas, reasoning processes, etc., should be described without mentioning the subject, the Ego, to which common sense ascribes them. "We all tend to say," observes Titchener,[8] " 'I think' and so to separate the 'I' as the active thinker from the 'thought' which is the result of the I's activity. Psychology cannot recognize this distinction. The datum for a psychology, if it is to be scientific psychology, is rather 'thought goes on': 'there are processes of thought in the world.' "

William James, who devotes more than two hundred pages to the perception of the self, perfectly agrees with Titchener. He deplores the fact that the language which we have inherited from prescientific days does not lend itself to scientific accuracy. "If we could say in English 'it thinks' as we say 'it rains or it blows' we should be stating the fact more simply and with the minimum of assumptions. As we cannot, we must simply say that thought goes on."[9] In another passage he seems to reduce the perception of the Ego to a group of kinesthetic sensations: "The self of selves, when carefully examined, is found to exist mainly

[7] *op. cit.*, *p.* 145.
[8] *Encyclopedia Americana*, "Psychology."
[9] *op. cit.*, p. 224.

of the collection of these peculiar motions in the head or between the head and the throat."[10]

It is notorious that philosophers differ in their theories concerning the meaning of the term Ego, self. Some mean, as St. Thomas, the person: body and soul united into one being. Others mean the soul "using the body," as Plato and the Augustinian Platonists. Others again, the Phenomenalists, since they have never really understood what is meant by a substance, reject the substantiality of the Ego and reduce its meaning to a sum of processes or phenomena. The Ego *is* not *has* thoughts and feelings. In the Phenomenalist camp we find the English Sensationalists, the Neo-Kantian School, and the Philosophy of Pure Becoming.

Modern psychology as a science is not expected to express a theory concerning the ultimate meaning of the Ego. All such theories and opinions must be left to the metaphysician. But if it wants to be a science in the true meaning of the term it must give us a phenomenal description of the facts as they are, and not a description of the facts as they may fit into the scheme of a metaphysical theory. Now to resolve our intellectual perception of the Ego to a group of kinesthetic sensations or to explain it away may fit well into the scheme of Phenomenalism, but it does not fit the facts as they are. There is absolutely no foundation for such an assertion in our experience.

All our conscious processes as they are actually given in experience have a double aspect: they are subjective facts, in so far as they are essentially modifications of the thinking subject or Ego; they are objective, in so far, as they have essentially a reference to an object. A mere sensation without a subject is nowhere to be met as a fact; a mere sensation without the awareness of an object is absurd. Every experience of ours involves the perception of the Ego which

[10] *op. cit.*, p. 301.

is the subject of this experience and consequently no experience can be expressed or described without reference to the experiencing Ego. Titchener, and he voices the opinion of many psychologists, cannot recognize this truth. He admits that this in the popular and common-sense notion of the mind but the object of scientific psychology is the "mind, not as popularly understood, but mind accessible to experiment." The datum of scientific psychology is: Thought processes are going on in the world.

It is true that this is the popular or common-sense notion of the mind. Common sense, however, in so far as the first principles of reason and the first data of our experience are concerned, cannot be questioned. Not even a "scientist" can deny his assent to its verdicts because they are self-evident and necessarily presupposed to every scientific research. He, therefore, who professes to condemn these first data of the intellect and our experience shows not the strength but the weakness of his understanding. That the mind as "accessible to experiment" can abstract from the subjective aspect of conscionusness is not true because Titchener should know that every observation of a mental fact, and *a fortiori* every experimental research, presupposes introspection or internal experience, and every act of introspection reveals the substantial subject or Ego of our conscious states.

From the foregoing brief remarks, necessarily limited to one or two topics, it will be seen that metaphysical prepossessions have had a great influence in modern psychology and hamper its progress. There is, however, some indication that a new type of modern psychology is about to be born. Many experimental researches, carried out with great thoroughness and of course without metaphysical prepossessions, have brought us a mass of evidence in favor of the immediate awareness of the Ego in action and also have proved beyond a doubt that consciousness of "self activity"

is absolutely distinct from the kinesthetic and organic phenomena which may or may not be present together with it. I refer in particular to the introspective investigations, objectively controlled, upon will processes of Narcis Ach, Michotte, Prum, Wells, etc."[11]

It is also worthy of note that all the experimentalists of the Wurzburg School, under the leaders, the late Professor Kuelpe and Dr. Buehler, side with Aristotle and Thomas Aquinas on the important problem of the nature of our ideas. Their remarkable investigations have experimentally established the fact that the distinctions between thought and sensation, between ideas and images, are distinctions of kind and not of degree, and consequently that the Sensationalistic account of our ideas is experimentally unsound.[12]

Another development of modern psychology is the growing dissatisfaction with the mosaic theory of consciousness of the Structuralists. Many psychologists became sceptical of these "atomistic theories" which would see in a complex perception nothing but a sum of sensations. Especially the Gestalt psychologists, Koffka, Kœhler, and Wertheimer, undertaking further studies on the higher thought processes and perception, came to the conclusion that the whole cannot be analyzed into its parts, nor can it be built up out of them because the whole is greater than the sum of its parts and our mental life contains something more than a sum of sensations.

Do we have, then, reason to believe with Dr. Rudolph Allers, of the University of Vienna, "that the gradual evolution of modern psychology will bring it still nearer to the great truth worked out by the Fathers and the great Christian thinkers of a later date?"[13] It is a development devout-

[11] Gruender, *Experimental Psychology*, pp. 405-427.

[12] Gruender, *op. cit.*, pp. 326-358.

[13] Allers, *The New Psychologies*, p. 80.

ly to be wished for, but I doubt its speedy realization. Titchener gives us a critical account of the Wurzburg School researches, but his treatment is decidely *biased,* written as it is from the standpoint of a Sensationalist.[14] Raymond Wheeler, in his experimental investigation of the process of choosing, reaches a totally different conclusion than Ach, Michotte, and Prum. All his subjects agreed, he says, that in their most genuine and difficult acts of choosing, such experiences as might be termed immediate consciousness of the self, consciousness of willing, could be analyzed into organic and kinesthetic processes, with the occasional visual, auditory, or verbal accomplishments.[15] He, therefore, returns to the Sensationalistic interpretation of the Ego.

The Gestalt Psychologists, Koffka, Kœhler, Wertheimer, have proved that the primitive form of Sensationalism of a Hobbes, a Hume, and a Titchener, is not sufficient to explain a perception. They recognize with Aristotle and Thomas Aquinas the necessity of a sensory synthesis which, according to Aristotelian psychology, is a function of the associative sense: the *sensus communis.* But every perception includes besides a nucleus of sensations and a sensory synthesis of the *sensus communis,* the revival of past experiences and intellectual interpretations of all kinds. All these conscious processes blend into one whole: the perception of a certain object. The Gestalt psychologists, however, do not explain and often evade the problem of meaning or intellectual interpretation and therefore return to Sensationalism in the form of a sensory synthesis, the Configuration or Gestalt.[16]

When metaphysical assumptions have once established

[14] Guender, *op. cit.,* p. 426.
[15] Gruender, *op. cit.,* p. 421.
[16] Moore, "Gestalt Psychology and Scholastic Philosophy," *The New Scholasticism* (Vol. VII, No. 1), p. 66.

themselves it is almost impossible to get rid of them afterwards, especially when there are rigorous extra-scientific interests such as religion. These extra-scientific, religious interests might have also some influence here. For a Sensationalistic interpretation of the human Ego and the nature of our higher thought processes logically leads to a materialistic explanation of human nature, while the intellectual perception of the Ego, distinct from its processes, and the essential distinction between thought processes and sensations and images leads to Mono-Dualism. Dualism of matter and spirit demands dualism of Creator and creature, of God and the world.

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SCHOLASTIC PHILOSOPHY AND SOCIOLOGY

I SELECT merely one phase of a subject which, because of its vastness, might well occupy this convention during an entire session. I speak for a better understanding between philosophy and sociology.

The Past:

There has been considerable lack of understanding between these two fields of thought, and the responsibility for it must be shared by both sides. Sociologists, on the one hand, have not presented their science in a way that would make it attractive to and command the attention and respect of philosophers. It was not their fault, perhaps, that sociologists were unable to formulate of their new science a definition that would indicate clearly its purpose, scope and content. But the fact is that this indefiniteness did not command the respect of philosophers or of philosophy. Likewise, the constantly shifting methods of sociology did not indicate that stability which scholastic philosophers postulate. In groping around for satisfactory tools with which to work, sociology reached for a time into anthro-

pology and ethnology; then for a spell it sought interpretations of social relationships in terms of *a priori* philosophical principles; afterwards it exploited biology as a means of interpretation; following this, psychology served its time in the sociological field. Each in its turn was emphasized as the key to sociological understanding, and, while each did valiant service in the field, there was a lack of permanency about method that did not appeal to those philosophers who were anxious to contact the new branch of learning. Another factor making for a lack of understanding was the shifting of interest from mere sociological observation to social science and then to general sociology or interpretation. At times philosophers might feel welcome in the field because of the emphasis placed, by sociology, on the importance of generalization and interpretation. At other times philosophers felt unwelcome, not so much because sociology stressed the empirical, but because of its disdain of what philosophy could offer: interpretation and generalization on social facts. Through these and other forces sociology created a barricade between itself and the world of philosophers.

Philosophers, in their turn, have contributed to this misunderstanding between their science and sociology. There is time in this paper to speak only of those philosophers who are scholastics or new scholastics. The lack of understanding of sociology by the philosophers is shown in several ways. Catholic education, collegiate, university and seminary, was tardy in extending to sociology an important place in its programs. This tardiness was supplemented by a rather narrow and circumscribed idea of sociological content. What was presented as sociology was frequently nothing more than a phase of ethics, an aspect of moral theology or merely practical work in social service. The wider relations of sociology to the subsidiary sciences were frequently ignored. The discoveries of anthropology and

ethnology, of education, of history, of economics, of political economy, as offered to sociology, were dealt with neither in a specialized nor a general way. A further indication of this misunderstanding is found in the dearth of genuinely sociological or genuinely socio-philosophical writings in scholastic literature. This misunderstanding is evident also in the unsatisfactory viewpoint of many of the so called scholastic sociological contributions. Too many of them instead of attempting the articulation of a real social philosophy were *a priori;* they neither drew their principles *from* nor tested them *by* the results of the latest sociological research. Too many of them, though, offered in the name of philosophy were not even philosophical, because they depended on arguments from authority purely theological or entirely supernatural. Sociologists were not clear about their science nor about their relation to philosophy. Philosophers misunderstood the nature of sociology and were not clear about their own duties to social philosophy. Mutual misunderstanding prevailed. I make it historical, even though the air is not entirely clear, even now.

Some indication has been given of the causes of this mutual misunderstanding; others may be passed in brief review. Sociologists feared philosophy because of an inherited or acquired dread of abstract, *a priori,* metaphysical speculation. They had not been taught that philosophy is more than this. Many sociologists, in idolizing the empirical, the statistical and the survey, were ignorant of the functions and value of generalization and integration in their own science and in all other sciences. Consequently they ignored the need of philosophical reasoning. They penalized their own science by an exclusive devotion to details. Furthermore, many narrow sociologists ignored great stretches of history, like the middle ages, the social life of which parallels our own era very closely. Out of the social relationships of these periods of the past and out of the

empirical study of their problems, scholastic social philosophy collected its principles and tested its programs. This empirical background of historical fact was unknown to nearly all sociologists and to many scholastic philosophers as well.

On the side of the scholastic philosophers there are certain causes responsible for their unsympathetic or unsatisfactory attitude toward sociology. Scholastic philosophy is very old, and it resented in many quarters the intrusion of a new branch of science into the field of thought. Its resentment deepened and prevented much mutual contact when certain general sociologists waged war for the primacy of sociology in the hierarchy of the sciences. But in this battle for supremacy economists and historians as well as philosophers were offended and divorced. Again scholastic philosophers can not be absolved of narrowness. Many philosophers were unwilling to presume that their hallowed generalizations might not be true. They were unwilling to submit them to a test made by themselves or others, in the light of the latest results of scientific sociological investigation. Other causes were also operative into which there is not time to enter.

The Present:

Today this complicated mutual misunderstanding is undergoing a radical change. Happy factors are conspiring to create a situation out of which mutual helpfulness may develop for philosophy, for sociology and for the general advancement of thought. Sociology is beginning to realize that in its neglect of philosophy it has deprived itself of a stability that has prevented its more rapid progress. Sociology, attracted by the practical social program of the Catholic Church, is becoming increasingly curious about the social philosophy out of which this practical program emerges. There is an increasing cry from leading contemporary sociologists for an insight into this scholastic social philosophy.

Scholastic philosophers in their turn are more willing today to confess that there has been a lack of empirical sociological contact in their social philosophy. They are being beset by eminent dynamic sociologists, Catholic and non-Catholic, for a practical and up-to-date expression of their social philosophy. They are being pressed on every side for an articulated and an authenticated proof of our social theory and for the presentation of social principles that will be of help out in the trenches of social service. They are being challenged to test their generalizations in the light of latest anthropological and sociological research. Instead of the misunderstanding of the past we face this phenomenon. The attitudes of both sociologists and scholastic philosophers have softened and there is a growing conviction of their mutual need and potential helpfulness.

The Future:

In view of the past misunderstanding and of the present tendencies toward a closer harmony, a new set of obligations has been placed upon the new scholastics. They must answer the call for a new presentation of their social philosophy. They should prepare such a philosophy by coöperative effort among themselves and by corporate research with experts in the field of the social sciences. I suggest this coöperation because the vastness of the project makes it unlikely that one individual can do more than a small section of the work.

The new scholastic philosophers must take advantage of the opportunity for leadership in the field of social philosophy commensurate with the leadership already asserted in the field of practical social service, and in the realm of the empirical social sciences like anthropology, education, industrial ethics and politics. This can be done only by offering concrete proof and justification for many of the traditional generalizations upon which our social philosophy is built.

The new scholastic philosophers have also a triple work of correction on their hands in this new venture. They must revise some of their own assumptions that no longer stand up under the discoveries of modern sociological research. They must also assist in the revision of the erroneous generalizations and scientific laws of society that have been drawn from sound data by sociologists unexperienced in philosophical reasoning. They must also assist in the revision of nefarious social programs that have emerged out of social philosophies intrinsically unsound.

The new scholastics for the speedy realization of these desirable objectives must present a united front and must not squander man power in useless debate about unessentials. The essential principles are held in common and it is the essential principles that should be presented with unanimity.

The new scholastics must avail themselves of all recent sociological data and must definitize at every turn for the accomplishment of the new synthesis. This demands an intelligent division of labor since the fields contacted by our social philosophy have become so highly specialized. This presumes that the preliminary skirmishing must be done, from our point of view, by men and women who are already deeply grounded in new scholasticism, who will throw themselves whole-heartedly and sympathetically into the work of understanding at least one of the specialized social sciences. Then, by mutual coöperation they will compare results of their specialized research and synthesize for the benefit of a more commanding scholastic social philosophy. This involves a tremendous program of research, but there seems to be no other satisfactory way of obtaining satisfactory and commanding results.

The new scholastics must also coöperate in another manner among themselves in the new expression of our social theory. Scarcely any one of our philosophical disciplines

can claim immunity from the change of attitude that will be created by closer contact with sociology and the social sciences. All of our philosophical branches are involved in the new obligation. Certainly metaphysics, psychology, ethics, and theodicy are directly and most closely concerned. It is in these fields that contemporary sociology is most inquisitive, and it is the expert philosophers in these fields whose generalizations and deductions need to be squared with, comforted by or at least tuned with empirical research. These branches, too, will be leaned on heavily in a restatement of our social philosophy. These philosophical branches can meet together in the sociological arena with great profit to all concerned. Out of this coöperation can be brought a wealth of new meaning to old philosophical terms and traditionally hallowed philosophical principles. Nature, purpose, change, the good, the beautiful, the true, induction, deduction, the social instincts of man, progress, sanction, civilization, happiness, morality, social order, social control, law, rights, the hunger for the divine—all these will stand clothed with more attractive and fuller meaning when presented by coöperative effort of philosophers among themselves and of philosophers with the sociologists. Sociology and social service in their turn will gain meaning and stability. And, after all, this is in consonance with the platform of new scholasticism issued by Pope Leo the Thirteenth: "to strengthen and complete the old by the new . . . to spread it far and wide for the defence and beauty of the Catholic faith, for the good of society and for the benefit of all the sciences."

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ROUND TABLE DISCUSSIONS

AFTERNOON SESSION—MONDAY, DEC. 30, 1935, AT 2:30 P. M.

DIVISION A: Metaphysics. *Chairman*, HARRY MCNEIL.
Leaders, JOSEPH C. FENTON AND FRANCIS E. MCMAHON.

Problem: Should the Science of Metaphysics Treat of all the Categories, or Only Those Which Are Co-extensive with Created Reality?

(a) Metaphysics Should Treat All the Categories.

Professor McMahon and I are dealing with this problem, not because it has any fundamental importance in its own right, but because its resolution will give a real insight into the nature and the competence of metaphysics as a science. This question cannot be discussed intelligently without a rather thorough examination of the meaning of metaphysics and of the categories, and an inquiry into the mode of intellectual procedure involved in the science of metaphysics. Obviously it is not in any sense a popular or a general subject, and it can be of interest only to those who have more than a superficial interest in and knowledge of the first philosophy.

It is my contention that metaphysics, taken adequately, should deal with every one of the predicaments or categories. This conclusion will become evident through an examination of metaphysics and of the nature of the categories, and through a conspectus of the procedure adopted by the outstanding contributors to the field of metaphysics.

The definition of metaphysics, consecrated by the philosophical thought of the ages, is "the science of being in so far as it is being."[1] Naturally, this is the definition which it is incumbent upon us to adopt. There are other ideas more or less widely prevalent today. One of these, stated frankly by Professor McGilvary, is of interest, though not precisely of value in our own time. According to his notion he tells us:[2] "I am tempted to define metaphysics as the view of the world in which physics and psychology are satisfactorily integrated." This, and the other views which proceed from the dualism of Descartes and the criticism of Kant, might possibly be reduced to the historical and speculative entity which we know as the first philosophy, but actually they stand apart from this discipline. The discipline which the ages have known as metaphysics is not a mere clearing house of scientific information, nor again a sterile criticism

[1] Saint Thomas Aquinas, *Commentary on the Metaphysics of Aristotle*, Book IV, Lect. i, No. 533. (The numbers here cited are those of the Cathala Edition, Turin 1914.)

[2] Evander Bradley McGilvary, "A Tentative Realistic Metaphysics;" in the symposium *Contemporary American Philosophy* (New York, 1930). The reference is to page 110 in the second volume.

of understanding, but the organized and certain appreciation of reality as such.

There are many ways of explaining this definition of the first philosophy, but none, I think, as forceful and as valid as that adopted by Aristotle and by Saint Thomas Aquinas. For these men, and for those who have successfully elaborated an explanation of reality with the aid of their instructions, the definition of metaphysics was not an *a priori* postulate into which the matter of the science had to be fitted, as into the bed of Procrustes. Indeed, it is perfectly proper to say that they did not start with that definition at all, but that they arrived at it by a process of reasoning that was not the least among their metaphysical accomplishments. Prescinding from the question of the validity of certain portions of the work, the *Metaphysics* of Aristotle has come down to us divided into fourteen books. In the order of that work, an order approved and adopted by Saint Thomas himself, the definition of metaphysics is not given until the beginning of the fourth book, and all of the investigation and the concern of the first three books are devoted to the task of arriving at that definition.

The science which Aristotle and Saint Thomas so successfully defined and elucidated is commensurate with the wisdom so ardently sought by the sages of ancient Greece.[3] That wisdom was nothing more or less than the perfection of the human intelligence, the ultimate natural perspective of reality. It was a sort of knowledge that was all-embracing, a synthesis that was broad enough to take in every particle and fiber of reality, and at the same time profound enough to afford the ultimately satisfactory explanation of the universe which the human mind was capable of attaining. All of the characteristics of wisdom, according to the Angelic Doctor, "belong to the man who knows the first and the universal causes."[4]

Metaphysics then sought the ultimate and the universal explanations of things, the things that exist in the world around us. And it is only because it seeks and actually offers this rational explanation of all things that metaphysics can lay claim to the title of the science of being, in so far as it is being.[5] To express the matter in ordinary scholastic terminology, the material object of metaphysics is being, every being, embracing whatever has, or can have, existence. That which is formally attained (the *obiectum formale quod*) is the very reason or nature of being itself. The motive by which this object is attained (the *obiectum formale quo* or *sub quo)* is, of course, the third degree of abstraction.[6] The material object is considered from

[3] Aristotle, *The First Book of the Metaphysics*, chapter 2, No. 982a (The numbers refer to the marginal markings of the Berlin Edition, followed in the Oxford translation.) ; 2nd edition, 1928.

[4] Saint Thomas, *Comm. in Met.*, Book I, Lect. ii No. 44.

[5] The text of Saint Thomas shows this very clearly: "*Omne principium est per se principium et causa alicuius naturae: sed nos quaerimus prima rerum principia et altissimas causas, sicut in primo dictum est, ergo sunt per se causa alicuius naturae. Quod ex hoc patet, quia omnes philosophi elementa quaerentes secundum quod sunt entia, quaerebant huiusmodi principia, scilicet prima et altissima; ergo in hac scientia quaerimus principia entis inquantum est ens: ergo ens est subjectum huius scientiae, quia quaelibet scientia est quaerens causas proprias sui subiecti.*" (*Comm. in Met., No.* 533.)

[6] cf. Gredt, *Elementa Philosophiae Aristotelico-Thomisticae Metaphysica*, No. 613 (Friburg in Bresgau, 1929).

the most profound and the most universal point of view within the natural capacity of the human mind. As Saint Thomas puts it, metaphysics is a science which starts off from the act of wonderment about the explanations of the things in the world. It will have completed its task when the wonder about these objects has been overcome by the light of understanding.[7]

Metaphysics, then, considers, and must consider, the real from the very point of view of its reality. Now, the real, or being that is considered in the science of metaphysics, is not the idea of being, but the very reason or meaning that is represented by that idea.[8] Precisely, because it is not a univocal idea,[9] the meaning conveyed in the idea of being is not a single meaning, but rather something primarily multiple.[10] For being represents that by which things are differentiated one from the other as well as that which they might have in common. The unity of being is not one of sameness, but one of proportion and attribution. Consequently, the reason or the meaning of being must be considered according to the various classifications on which that proportion is based.

This is the role of the categories in the traditional philosophy. Originally and primarily the study of the categories pertains to the science of logic. Category is derived from the Greek "*kategorein*," to attribute, and the category is the ultimate univocal classification of simple terms. The logician considers the categories from the point of view of the second intention, with the idea of ordering human rational procedure. But the nature signified and expressed by each of the categories can be considered by the devotee of the *philosophia realis* that nature is something; it is real, and at the same time it is irreducible to any other univocal concept.

If we were to consider the idea of being as univocal, and the different categories as kinds of being in the same way that species are members of a genus, then, undoubtedly, there would be no particular reason for studying all of the categories in metaphysics. It would be perfectly possible to study animal life without taking every species of animal life into consideration. For the specific difference is something extrinsic to the nature of the genus itself. But that by which the various categories differ one from the other is not something ex-

[7] "*Erit ergo finis huius scientiae in quem proficere debemus, ut causas cognoscentes, non admiremur de earum effectibus.*" St. Thomas, *Comm. in Met.*, Book I, Lect iii, No. 67.

[8] cf. Maritain, *Les Degres du Savoir*, (Paris, 1932. Chapter V *passim.*) Incidentally, the distinction between the meaning of the subject and the object of a science is given here by Maritain with a clarity which will rarely be found outside of the great commentators of an earlier day. Another explanation, no less admirable and objective, is that given by Bannez in his *Scholastica Commentaria in Iam Partem Sancti Thomae* (Madrid and Valencia, 1934, p. 51.)

[9] All too frequently manuals attribute the contradictory *simpliciter* to Duns Scotus. Longpre has shown in his *Philosophie du B. Duns Scot* (Paris, 1924). that the great Franciscan doctor taught a sort of analogy that was compatible with univocity (pp. 98 *et seq.*) cf. also Scotus, *Commentaria Oxoniensia*, Book I, Dist. VIII, Quaest. III, Art. I, No. 626 (the numeration is of the edition of Fernandez Garcia, Quarrachi, 1912).

[10] *Par conséquent, la similitude analogique, telle que la considéré le philosophe ne coincide pas avec celle quiétudie la plupart du temps le naturaliste: ce n'est pas la participation inégale à une même perfection générique ou specifique, mais une resemblance de rapports, reliant des essences diverses.* Penido, *Le Role de L'Analogie en Theologie Dogmatique* (Paris, 1931), Chapter I, *Preliminaires Philosophiques*, p. 20.

trinsic from the reason of being. And it happens to be something that can only be explained from the point of view of being itself, and thus it pertains to the science of metaphysics.

This is the point upon which we must fix our attention if we are to understand the competence of metaphysics in the study of the categories. Certainly no one would hold that the science of metaphysics is called upon to offer a full and perfect treatment of each of the several categories. The first philosophy deals with them only according as they fall under the formal object of metaphysics, according to the nature and the significance of being. Each of the categories, even the least important, is something, and can be considered under the prospect of being itself. And in so far as they are understandable from the point of view of being, they are to be treated in metaphysics.[11]

They can be treated from the point of view of being because of the very analogy of being itself. Each of the categories, objectively considered, is something, and something that has a certain reference to existence. Furthermore, each has a certain definite reference to that which is being in the full and strict sense of the word, that in which the nature of being, represented in our ideas, is found primarily among the things of earth. Each of the categories has its own definite relation to the first substance. Objectively, the way in which each is referred to existence and to the substance which primarily possesses existence is something that falls within the competence of metaphysics.

Now, it only remains to show that each of the categories has a direct reference to being itself, and as a result to the study of being. That reference is established by the fact that these categories are the supreme *genera*, and that the natures signified in the categories are the most universal among the essences. There is a singular and single meaning attached to the word animal. There is also a singular and single meaning attached to the word substance, and to action, passion and place. There is no single meaning into which these can be resolved, in the sense that a species can be predicated of, and in a certain sense resolved into a genus. If the notion of being is analogical, it is only because it applies to all of these things, not *ex æquo*, but according to the various means in which they can share in existence. And the only way in which they can be set in their proper perspective, the only way in which they can be appreciated according to their reality, is through the consideration of metaphysics. For that being which is considered *ex professo* in metaphysics is a being that is in the world from which man draws his knowledge according to these ten modes.

However, it must not be supposed that the being of metaphysics is something abstracted from the different categories according to what Cajetan called the process of total abstraction.[12] Being is not merely a predicate that is more universal than the categories, it is precisely something that is more formal, and the abstraction by which

[11] They are thus treated in a very competent modern work, Webert, *Essai de Metaphysique Thomiste* (Paris, 1927).

[12] Cajetan, *Commentarium in De Ente et Essentia*, Quaestio I, No. 5. (The number is the indication in the Laurent Edition, Turin 1934.)

it is attained is that which the great Dominican called "*abstractio formalis.*" For it is the most real, the most actual and the most important of the characteristics which is treated in metaphysics. The process of total abstraction seizes upon that element in an object which is determinable and potential, it prescinds from the actualizing specific difference.

Thus the abstraction of metaphysics, that process by which we arrive at our analagous idea of being, is one which takes into consideration precisely the most important and the most actual information about each of the categories. And, if we consider the matter closely enough, we shall find that metaphysics does give to each of the categories its proper and actual localization in the hierarchy of being.

The fact that the category is primarily a mode of predication[13] does not in the least detract from the ability of metaphysics to deal with these predicaments from its own objective angle. For the Thomist logic and metaphysics are not possessed of two realms that are absolutely separate and independent. If the category is the ultimate mode of univocal predication, it is only because each represents the ultimate really generic essence. Aristotle was fully aware of this fact, and he incorporated all of the categories into his own metaphysics. "The kinds of essential being are precisely those that are indicated by the figures of predication; for the senses of being are just as many as these figures."[14]

The commentary on this passage shows how well the Angelic Doctor understood the place the categories were to occupy in the adequate treatment of metaphysics. Saint Thomas Aquinas first notes that he (Aristotle) is distinguishing *real* being through the ten categories. And the being that is divided through the ten categories is precisely that which the science of metaphysics deals, the *ens perfectum.* Hence that metaphysics which fails to take into account the ten categories is to a certain extent, at least, a *metaphyique manqué.*[15]

Saint Thomas then proceeds to the reason why all of these categories are necessary for the integrity of metaphysics. "Being," he tells us, "is contracted to the different *genera* according to a different mode of predicability, which follows *upon a different way of being*—and because of this that into which being is primarily divided are called the predicaments because they are distinguished according to the different modes of predication."[16]

That of which other things are predicated, or which, in the objective and metaphysical sense, other modes of being affect is substance. It is the particular substance, the "*substantia prima*" of the peripatetics, that the science itself treats. The second substance, or the reflex universal, is of aid to us in knowing and in considering the first. It has no value in its own right. So it is that every category represents being, either in itself, or in another, as in a subject.

In the second way, that is to say in so far as it is being in another,

[13] It is in this primary sense that they are defined by Aristotle in Chapter 4 of the *Categories,* No. 2b.
[14] *The Metaphysics,* Book V, (Delta) cap. 7, No. 1017a.
[15] *Comm. in Meta.,* Book V, Lect. ix, No. 889.
[16] *op. cit.,* No. 890.

it can be in that other either by reason of itself, and absolutely, as something that is consequent upon the matter, and this is quantity, or as something consequent to the form, and this is quality; or it can be present not absolutely, but with respect to something else, and this is relation.

In the third way a predicate (and consequently a primary mode of being) can be taken from something outside of the subject itself. This can come about in two different manners. In one way that from which the predicate is taken can be entirely outside of the subject, and this is predicated according to the genus of vesture, as for example we say that Socrates is shod or clothed. But if this outside thing from which the predicate is named is the measure of the subject in which it is found, it is either time or, not considering the order of parts among themselves, place, and, with this consideration, position. If that from which the category is taken is in the subject only according to a certain respect, it is either there as a principle, as in the category of action, or in the terminus, as in the category of passion.[17]

It is obvious that from this respect, at least, the consideration of all the categories pertains to the science of metaphysics. Although the science deals principally with substance,[18] and all other modes of being are studied only in so far as they affect this, all of the others, according to the reason and the extent of their being, are to be dealt with in the first philosophy. "Whatever things receive commonly the predication of one reason, even though that predication be analogical rather than univocal, are to be considered in one science. But being is predicated in this way (analogically) of all things. Consequently all things pertain to the consideration of this science, which deals with being precisely, in so far as it is being, both substances and accidents."[19]

Naturally the other categories will receive a rather modest treatment in the adequate science of metaphysics, since the object of concern is so obviously substance and the modes of substance. But it is important that they enter into that consideration even for the modicum. Otherwise our metaphysics of the Thomistic schools will risk losing its hold upon reality,[20] and will run the danger of degenerating into the play upon mere words which passes as philosophy in so many of those milieus which have cut themselves away from the living traditions of human thought. For metaphysics, to the Thomist, is not an academic exercise, nor merely a way of appreciating a certain set of abstractions more or less devoid of foundation. It must, to speak the words of Aristotle and of the Angelic Doctor, terminate in a glorious and an objective perspective of the universe, and give us a greater and a more perfect appreciation of the very mundane reality with which we come in daily contact. Metaphysics is nothing if it be not a vision of the whole of life, naturally appreciable.

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[17] *op. cit.*, No. 891-2.
[18] *op. cit.*, Book VII, Lect. i, *passim*.
[19] *op. cit.*, Book IV, Lect. i, No. 534.
[20] This realistic character of Thomism has been greatly stressed in the work of Forest, *La Structure Metaphysique du Concret* (Paris, 1931).

(a) Metaphysics Should Treat Only Those Categories that are Coextensive with Reality.

If Thomistic philosophy is important, as a great many of us think it is, then it is important to determine as well as we can the precise content of its subject matter, to mark off as carefully as possible its various divisions, and to indicate what problems characteristically pertain to these various divisions. It is a phase of the last undertaking with which we are concerned here. The problem of the number of categories with which Metaphysics is competent to deal has been presented by Dr. Fenton. The problem was evoked by the fact that some outstanding modern Thomists hold definitely to the view that Metaphysics treats of but three categories, those, namely, pertaining to all finite being, and in which corporeity is not intrinsically involved. Among these Thomists are Gredt and De Raeymaeker.[1] The problem is to decide whether such a position is in conformity with the doctrine and spirit of Thomistic philosophy. The task assigned to this writer is to prove that it is. I do not believe that the question of the number of categories is necessarily connected with the question of whether the object of Metaphysics is Being as such or is Finite Being as being. Gredt, for example, *(op. cit.)* takes the view that the object of Metaphysics is Being as such, and yet maintains that those categories involving in their concept corporeity (quantity, time, place, etc.) fall outside the sphere of Metaphysics. I will here, however, defend the view that the object of Metaphysics is Finite Being as being. I will show that historically such a view as to the object of Metaphysics has been maintained by some Thomists, and will try to show that, logically, Metaphysics so conceived considers directly and explicitly only those categories which pertain to all finite being.

Among the many assumptions made here, there is one to which particular reference must be made. Strict Thomism adheres to the division of the speculative sciences first made by Aristotle, and later by St. Thomas, a division which rests upon the three degrees of intellectual abstraction. This division is rooted in the doctrine of Potency and Act mediately, and in the Thomistic doctrine of intelligibility immediately. John of St. Thomas in his *Logica* gives the classical presentation of this division. In recent times brilliant defenses of it have been made by Garrigou-Lagrange and by Dr. Rudolph Bandas. It is regrettable that even some modern Thomists have departed from this division, and have adhered to the division of the philosophical sciences as proposed by Christian Wolff. According to the Aristotelian-Thomistic classification, there are three degrees of abstraction and accordingly three degrees of intelligibility (strictly, knowability). Corresponding to the first degree of abstraction, abstraction from individual matter, is the science of Physics *(Philosophia Naturalis.) Philosophia Naturalis* has for its object mobile being; it embraces not only what is conceived today as Cosmology but also Psychology (it embraces the latter for the profound reason that the human soul is the form of a mobile being.) To the second degree of abstraction,

[1] Gredt, *Elementa Philosophiae*, Vol. II, p. 2. De Raeymaeker, *Metaphysica Generalis*, p. 150.

abstraction from sensible matter, corresponds Mathematics, which treats of Quantity. Finally, the third degree of abstraction, abstraction from intelligible matter, delivers up the object of Metaphysics. As regards the last abstraction St. Thomas declares: *"Quædam sunt speculabilia quæ non dependent a materia secundum esse, quia sine materia esse possunt, sive numquam sint in materia, sicut Deus et Angelus, sive in quibusdam sint in materia, et in quibusdam non, ut substantia, qualitas, potentia et actus, unum et multa et huiusmodi: de quibus est theologia, idest divina scientia, quia præcipuum cognitorum in ea est Deus. Alio nomine dicitur metaphysica.*[2] Gredt seems to have excluded from Metaphysics all but the above-mentioned three categories for reasons based on this text. The other seven categories are not entities which *"sine materia esse possunt."*

What is the object of Metaphysics? Most Thomists will reply: Being as such. If this is true it seems to follow that the principle object of Metaphysics would be the principle Being, that is, God, understanding by "Being as such" *every* being in so far as being. But certain texts of the Angelic Doctor have led some Thomists, however, to take a different stand. According to this other position, God is not a part of the object of Metaphysics, but enters into it as the *cause of the object.* There is a significant passage in the forward to St. Thomas' *Commentary on the Metaphysics of Aristotle: Ejusdem autem scientiæ est considerare causas proprias alicujus generis, et genus ipsum: sicut Naturalis considerat principia corporis naturalis. Unde oportet quod ad eamdem scientiam pertineat considerare substantias separatas, et ens commune, quod est genus, cujus sunt prædictæ substantias communes et universales causæ.* The same thought is substantially presented in *In Bœthium De Trinitate,* q. 5, a. 1.

Suarez seems to have identified this view that God is not part of the object of Metaphysics with that of the Thomists. In his Metaphysics he endeavors to prove that *"Deus non solum ut causa objecti metaphysicæ, sed etiam ut pars illius præcipua ad hanc scientiam pertinet.*[3] Against whom is Suarez explicitly defending his thesis? The answer is not difficult. It is one Dominic of Flanders that Suarez charges with erroneously holding to the view that the object of Metaphysics is finite being.[4]

Who is Dominic of Flanders? According to De Wulf[5] he taught at the University of Bologna about 1470, and died about 1500. Taking Thomas Aquinas as his guide, he composed a *Summa divinæ philosophiæ.* He is classified by De Wulf as a Thomist. According to Suarez, his view regarding the object of Metaphysics was based on

[2] *In Bœthium De Trinitate,* q. 5, a. 1.

[3] *Disput. Metaph.,* d. 1, s. 1, n. 18-20. De Raeymaeker comments that *"quam thesim ita defendit ut explicatio Aristotelis et altera St. Thomae, quatenus Deus est objectum metaphysicae quia est omnium causa, rejicienda videatur." Metaphysica Generalis, Tomus* II, p. 237.

[4] *"Quinta opinio, quae a fortiore etiam manet ex dictis improbata, est omnino diversa a duabus praecedentibus . . . dicit enim ens divisum in decem praedicamenta esse adequatum objectum huius scientiae. Dupliciter autem potest concipi hoc ens juxta diversas opiniones. Primo, supponendo immaterialies substantias finitas et accidentia earum in praedicamentis collocari, et hoc modo objectum erit ens finitum, solemque excluderetur Deus a ratione objecti, quamvis non omnino excludatur a consideratione hujus scientiae, saltem quatenus causa prima est objecti ejus."* op. cit., Disp. I. n. 18.

[5] *History of Mediaeval Philosophy,* Vol. II, p. 294.

the authority of the Angelic Doctor. Suarez objects to the interpretation which this fifteenth-century Thomist puts upon the texts of Aquinas. Whichever interpretation is correct, the fact remains that for Suarez the object of Metaphysics is Being as such (including as principal part of the object God), and a Thomistic opinion which he controverts is that the object is finite being.[6]

For the metaphysician, who moves on the third level of abstraction, and who considers the object from an immaterial viewpoint, finite being exhibits but three of the categories: substance, quality and relation, because only these three involve no corporeity in their essential concept. Proceeding in a more inductive fashion, he knows from *Philosophia Naturalis* that the human soul is a spiritual substance, endowed with immediate principles of operation (qualities) and having transcendental and predicamental relations to other finite beings, and especially to its Creator. In all finite being, therefore, he knows that these three categories are alone found. It is these, therefore, that he will primarily study. To what degree will the other categories come within the scope of the metaphysician? Firstly, in so far as they participate in the analogical notion of "accident," the metaphysician necessarily includes them in his general discussion of accident; his observations about *inesse* in general apply to quantity as much as to quality. But the *mode of participation* of this analogical concept of *inesse* in quantity and the other six material categories is left by the metaphysician to the cosmologist. Secondly, for purposes of explanation and of example the metaphysician will refer to these material categories: in the words of Gredt, they will be treated secondarily *ad elucidandum objectum proprium.*[7]

A formidable objection to the view proposed here as to the scope of Metaphysics is the fact that Aristotle treats of all the categories in his *Metaphysics.* It is perhaps this fact above all that has influenced most Scholastics to take the view now commonly held. But was Aristotle's own concept of Metaphysics clear? Is it possible that Aristotle was above all a logician and a cosmologist, and therefore one from whom one can expect an imperfect metaphysical approach? Gilson has rather well demonstrated that Aristotle and all the other Greeks lacked the idea of creation. Mansion has rather convincingly shown that the basic question of the real distinction of essence and existence in finite beings is not even discussed by the Stagirite. In the light of this and of other evidence, it is a bit extravagant to demand that Aristotle's views about the scope of Metaphysics be accepted without serious discussion.

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[6] A modern Thomist, Jacques Maritain, will maintain that the *subject* of Metaphysics is finite being, or rather analogical being as found in created and material being. I am not sure what Maritain means by "subject." If he means "material object" as opposed to "formal object" then he disagrees with Gredt, for whom the "material object" of Metaphysics is every being (*op. cit.*, p. 1). It is regrettable, I think, that the concepts of "subject" and "object" of a science seem to have dropped out of most current philosophical literature. Among the great masters of Thomism the distinction was rarely, if ever, lost sight of. Caproleus takes great pains to distinguish between the subject and object of a science (*vd.* his *Libri defensionum theologiae divi Thomae de Aquino*, Vol. I, p. 46: *Secunda conclusio est quod subjectum scientiae non omnino est idem quod objectum ejusdem.*)

[7] *op. cit.*, p. 2

SUMMARY OF DISCUSSION IN DIVISION A.

Before the general discussion the chairman asked for Dr. Fenton's remarks on Dr. McMahon's paper.

Dr. Fenton remarked that the central point of discussion was the object of metaphysics, that is, finite being. Metaphysics is certainly an examination of the world around us. Finite being is the subject matter. But do we consider finite being by itself or does philosophy give us a better understanding of *ens in quantum ens*—that is, metaphysics looking for most profound causes in dealing with things from the point of view of reality. Therefore, the competency of metaphysics will extend to every object that can be called a thing. If you can say that this desk, this mobile, this material thing can be considered in metaphysics, then all the categories must be included. St. Thomas shows only ten.

Dr. McMahon: Metaphysics does talk about "*this*" book. It deals with what is eminently real in things. You can see in real being three grades of abstraction. John of St. Thomas says that the three abstractions are not just acts of the mind but correspond to three levels of thing. In the last abstraction we penetrate in a most intimate way into the object. Metaphysics, then, indeed views this as finite being. It emphasizes two contradictory judgments, "this" is an act and it is limited. An act is limited not by itself but by a potency. The pivotal concept is the real distinction of essence and existence.

Dr. Sigmar: The idea that there is no philosophy but metaphysics is a heresy. You have to include ethics and logic. There are not necessarily ten categories; there may be more. He then gave examples from different philosophers of how the number has varied.

Dr. O'Meara: Couldn't the question be considered in reference to the object of the intellect?

Some consider *ens qua ens* is the object of metaphysics; on the other hand, the object of the human intellect is the essences of things. Can't these be considered together?

Dr. O'Meara also questioned whether the expression "*objectum adequatum*" was used in St. Thomas.

Dr. Fenton: The common formal object of the human intelligence is reality, *i. e.*, what a thing is. The human intelligence is not intelligence in general but that faculty which can know the meaning of—can abstract from material things. Metaphysics is a science that seeks the most profound explanation of all things, and so treats of finite being as being, not from a limited point of view.

Dr. Groen: It must be agreed that the general question of substance and accident is treated in metaphysics, but any category like quantity, in as much as it is a category of mobile being, must be treated in cosmology.

Dr. Fenton: He objected that the category habitus (Dr. Groen remarked that it was the most doubtful of the categories) is a category in so far as finite being can be associated with other beings. If you say it is being, then it is in metaphysics. If you consider it as a mode of being, then as a mode it is not in metaphysics.

Dr. Nolan: As regards the formal object of metaphysics, there is sometimes the use of the same term, but there is a difference, as there is between Suarez and St. Thomas. Traditional Thomists have taken their cue from Caietan because analogy is not clearly developed in St. Thomas. The point is, I do not think that we can solve this question by saying that the formal object of metaphysics is being as such. There is something deeper if you get into analogy.

Dr. Phelan: There is an idea that unites the two papers. Neither is as far apart as each seems. The problem of metaphysics which attempts to give us the formal object of metaphysics, that is, what is specific of that habitus of metaphysics finds its answer in the ordinary definition of metaphysics, the study of *ens* as *ens*. This is not a tautology any more than is the principle of identity. *Ens* does not mean the same in each case. Dr. McMahon shows this when he suggests the real distinction. The first *ens* means the thing which is, that is, anything with an essence. It is the subject matter. The second *ens* means the act by which the thing exercises existence. Metaphysics must deal with "*actus exercitus*" and not with "*actus signatus.*" It is the science of anything from that point of view that it exercises an act of existence. God is not excluded from its scope. He enters at the top; we must start lower. Begin by asking: What has every being because it is a being, because it has existence? In *De Veritate*, I 1, we are told we must distinguish the transcendentals, then afterwards the categories. A discussion on categories would carry this discussion too far. But it must be added that a philosophy that deals with just finite being is Aristotelian rather than Thomistic.

Dr. Fenton: We start not from *ens* as *ens* but from reality—"*quid nominis.*" We then come to the idea that we must treat *ens* as *ens*. If you say that the first *ens* means *ens* in general and the second *ens* as in *actu exercito*, you would remove everything that is possible.

Dr. Phelan: *Ens* can be divided into *ens realis* and *ens rationis*. Under *ens realis* you can consider *ens actualis* and *ens possibilis*. But *ens actualis* and *possibilis* may be considered as *in actu exercito* (cf. the 12th Chapter of *De Potentia).*

Dr. Fenton: That is not the interpretation of the 12th Chapter of the *De Potentia.* You can not have *ens possibilis* as exercising existence.

Fr. Bull: Why not accept the old fashioned expression of the object of metaphysics, that is, "*ens præcivive conceptum?*" From this point of view mind is not engaged with the state of being but with being as the object of thought. The mind refuses every other element in being except its opposition to nothing.

Then you can go on with the distinction in philosophy of general metaphysics and special metaphysics. That division Dr. McMahon rejected.

Dr. Nolan: When you speak of the object of metaphysics, do you distinguish between the subject and the object of metaphysics?

Fr. Bull: No. We should talk about that thing which metaphys-

ics is about without technical discussion of subject and object. Why should the *ens prævivive conceptum* be rejected?

Dr. Nolan: I do not agree with Dr. Fenton's object of metaphysics. If you take "this" or "that," you start in an empirical way. Metaphysics does not start until you reach a high state of abstraction.

Dr. Fenton: When you start with material object, you haven't got the formal object. Will not take up *ens præcisum* because we want not a notion but reality.

Dr. O'Grady: The number of categories is a pseudo question. Dr. McMahon would force all future knowledge into three abstractions. But the sciences which are post-medieval, for example, physics and chemistry, can't fit into Aristotelian concepts.

Also, where do people get the clairvoyant power to say that a man discusses concepts and not beings. Dr. Phelan's explanation of "*ens* as *ens*" is satisfactory. In fact, what other meaning could it have?

Dr. McMahon: He said, in summing up, that there is a utility in the discussion of the Thomistic view. It would be a sign of vitality if there was more discussion as regards the question of Thomistic metaphysics and the categories.

Professor N. Balthasar, of Louvain, confirmed his point of view that metaphysics is competent to treat of the three categories of substance, quality, and relation. Professor Balthasar added that creation is not an accident distinct from being, so you can not class the relation of creature to creator as an accident. (cf. S.T., I, q4 a1.)

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DIVISION B: Social Ethics. *Chairman,* AVITUS E. LYONS. *Leaders,* JOHN W. R. MAGUIRE AND JAMES MCDONOUGH.

Problem: Can Collective Bargaining be Ethically Enforced.

(a)—Affirmative View.

Since the passage of the National Industrial Recovery Act, the question of collective bargaining has become of practical importance. Section 7a of this Act made provision that the workingmen of the country had the right to join unions of their own choosing and to enter into collective bargaining with their employers through representatives that were to be chosen free from the "restraint, coercion, and intimidation" of employers. Since the declaration of the unconstitutionality of the National Industrial Recovery Act, practically the same provisions have been re-enacted into law in the so-called Wagner Labor Disputes Act. The question, therefore, immediately arises whether it is within the limits of the just powers of the State to compel an employer, unwilling to do so, to enter into collective bargaining with his employees. This question has far more than mere academic

interest and importance, because no serious student of public affairs can deny the increasing trend towards a totalitarian State, and it is, therefore, exceedingly important to understand clearly what should be the limits of State action on sound ethical grounds.

I am of the opinion that it is within the proper functions of the State, under certain circumstances, to enforce collective bargaining. All Scholastic philosophers are agreed that the State is a perfect society, and may therefore do anything not *in se malum* that is necessary to secure the public welfare. Collective bargaining is necessary for the public welfare. Therefore, the State can enforce collective bargaining. The minor of this proposition, in my humble opinion, can be rather easily proved, although I recognize that a great many implications of human rights are involved. Workingmen have a natural right to join unions of their own choosing because every human being has the right to enter into association with his fellow beings for purposes that are not in themselves evil. Should authority be required for this statement, one need refer only to the encyclical of Pope Leo XIII *On the Condition of Labor*, and to the encyclical *Quadregesimo Anno* of Pope Pius XI. It may not be inappropriate to quote specifically two passages from Pope Leo XIII's encyclical:

> Let it be granted, then, as a rule, workmen and employers should make free agreements, and in particular should freely agree as to wages; nevertheless, there is a dictate of nature more imperious and more ancient than any bargain between man and man, that the remuneration must be enough to support the wage-earner in reasonable and frugal comfort. If through necessity or fear of a worse evil, the workman accepts harder conditions because an employer or contractor will give him no better, he is the victim of force and injustice. In these and similar questions, however—such as, for example, the hours of labor in different trades, the sanitary precautions to be observed in factories and workshops, etc.—in order to supercede undue interference on the part of the State, especially as circumstances, times, and localities differ so widely, it is advisable that recourse be had to Societies or Boards such as we shall mention presently, or to some other method of safeguarding the interests of wage-earners; the State to be asked for approval and protection. . . . .
>
> The most important of all are Workmen's Associations; for these virtually include all the rest. History attests what excellent results were effected by the Artificers' Guilds of a former day. They were the means not only of many advantages to the workmen, but in no small degree of the advancement of art, as numerous monuments remain to prove. Such associations should be adapted to the requirements of the age in which we live—an age of greater instruction, of different customs, and of more numerous requirements in daily life. . . . .
>
> The experience of his own weakness urges man to call in help from without. We read in the pages of Holy Writ: "It is better that two should be together than one; for they have the advantage of their society. If one fall he shall be supported by the other. Woe to him that is alone, for when he falleth he hath none to lift him up." And further: "A brother that is helped by his brother is like a strong city." It is this natural impulse which unites men in civil society; and it is this also which makes them band themselves together in associations of

> citizen with citizen; associations which, it is true, can not be called societies in the complete sense of the word, but which are societies nevertheless. . . . .
>
> Particular societies, then, although they exist within the State and are each a part of the State, nevertheless can not be prohibited by the State absolutely and as such. For to enter into "society" of this kind is the natural right of man; and the State must protect natural rights, not destroy them; and if it forbids its citizens to form associations, it contradicts the very principle of its own existence; for both they and it exist in virtue of the same principle, viz., the natural propensity of man to live in society.

Pope Pius XI also insisted on "the re-establishment of occupational groups." It is clear, therefore, both from natural reason and from the high ethical authority of the Popes that workingmen have a right to form unions. Unions, after all, are only means to an end, the end being the securing of just wages, reasonable hours, and satisfactory working conditions through the agency of collective bargaining. Hence, it seems to me, that workingmen have a right to collective bargaining. Rights and duties are correlative terms, and if the workingman has a right to collective bargaining, his employer has a duty to grant him this right, and it is therefore within the function of the State to enforce this right.

I do not think that it can be successfully denied that if collective bargaining had been more generally practiced, wages would have been higher and hours would have been shorter in 1929, with the result that there would have been more purchasing power in the hands of the masses of the people, and consequently the depression would not have taken place. Surely, unemployment, that involves nearly 25% of the total working force of the country, is a matter that so vitally affects general public welfare it must be a concern of the State. The very best way to avoid industrial fascism and complete dictatorship of the State over industry is to set up machinery to enable those most concerned in industry, employers and employees, to determine wages, hours, and working conditions. This can be done effectively only through collective bargaining, and if the employer refuses to enter into collective bargaining, then the State, in preservation of the public welfare, it seems to me, can compel him to do so.

Industry has long since ceased to be merely an individual concern. The simple personal relationship of master and servant with which the philosophers and theologians of another age dealt no longer prevails. In large numbers of cases the master is an impersonal corporation, and the servants are thousands of employees, in the vast majority of cases unknown personally to the manager of the corporation, and merely numbers or names on a time sheet. I have known presidents of large corporations, who would treat their personal servants in their own homes with the utmost generosity and consideration, cut wages, lengthen hours, and impose harsh working conditions upon thousands of the employees of their corporations. This lack of personal relationship is one of the serious defects of our modern corporate industrial system, and we therefore need a different application

of very old, ethical principles to meet these changed conditions. The individual workingman standing alone has no equality of bargaining power with his employer, and therefore even to make a just wage contract it is necessary for him to join a union and to enter into collective bargaining. If an employer, therefore, refuses to enter into collective bargaining with his employees, the State and the interest of the public welfare can ethically compel him to do so. This, it appears to me, is the mind of Pope Pius XI, when in the *Quadregesimo Anno* he says:

> With regard to the civil power, Leo XIII boldly passed beyond the restrictions imposed by Liberalism, fearlessly proclaimed the doctrine that the civil power is more than the mere guardian of law and order, and that it must strive with all zeal "to make sure that the laws and institutions, the general character and administration of the commonwealth, should be such as of themselves to realize public well-being and private prosperity." It is true, indeed, that a just freedom of action should be left to individual citizens and families; but this principle is only valid as long as the common good is secure and no injustice is entailed. The duty of rulers is to protect the community and its various elements; and in protecting the rights of individuals they must have special regard for the infirm and needy. "For the richer class have many ways of shielding themselves and stand less in need of help from the State, whereas the mass of the poor have no resources of their own to fall back upon and must chiefly depend upon the assistance of the State. And for this reason wage-earners, since they mostly belong to that class, should be especially cared for and protected by the government."

And again,

> Just as the unity of human society cannot be built upon class warfare, so the proper ordering of economic affairs cannot be left to free competition alone. From this source have proceeded in the past all the errors of the "individualistic" school. This school, ignorant or forgetful of the social and moral aspect of economic matters, teaches that the State should refrain in theory and practice from interfering therein, because these possess in free competition and open markets a principle of self-direction better able to control them than any created intellect. Free competition, however, though within certain limits just and productive of good results, cannot be the ruling principle of the economic world; this has been abundantly proved by the consequences that have followed from the free rein given to these dangerous individualistic ideals. It is, therefore, very necessary that economic affairs be once more subjected to and governed by a true and effective guiding principle. Still less can this function be exercised by the economic supremacy which within recent times has taken the place of free competition; for this is a headstrong and vehement power, which, if it is to prove beneficial to mankind, needs to be curbed strongly and ruled with prudence. It cannot, however, be curbed and governed by itself. More lofty and noble principles must therefore be sought in order to control this supremacy sternly and uncompromisingly, to wit, social justice and social charity. . . . .
>
> The State here grants legal recognition to the syndicate or union, and thereby confers on it some of the features of a monopoly, for in virtue of this recognition, it alone can represent respectively workingmen and employers, and it alone can

> conclude labor contracts and labor agreements. Affiliation to the syndicate is optional for everyone; but in this sense only can the syndical organization be said to be free, since the contribution to the union and other special taxes are obligatory for all who belong to a given branch, whether workingmen or employers, and the labor-contracts drawn up by the legal syndicate are likewise obligatory. It is true that it has been authoritatively declared that the legal syndicate does not exclude the existence of unrecognized trade associations.
>
> The corporations are composed of representatives of the unions of workingmen and employers of the same trade or profession, and as true and genuine organs and institutions of the State they direct and coördinate the activities of the unions in all matters of common interest.

It would seem from these quotations that Pope Pius XI believes in the desirability of collective bargaining and the right of the State to intervene in the interests of social justice.

As a matter of fact, our modern industrial system under the influence of the doctrine of "laissez faire" is not founded on sound ethical principles but instead upon the exaggerated individualism of Protestantism. The fundamental principle of Protestantism is an appeal to the individual mind and conscience as the supreme determinant of religious truth and conduct, whereas the fundamental principle of Catholicism is an appeal to the properly constituted teaching authority of the Church as the supreme determinant of religious truth and conduct. When the old social and labor laws that had been enacted under the influence of the Guilds were no longer applicable to the changed conditions that took place after the Industrial Revolution, Adam Smith invented the doctrine of "laissez faire," which was nothing but the application of the fundamental principles of Protestantism to economic, social and political conditions. This doctrine of noninterference on the part of the State in economic affairs has led to a large measure of selfish individualism and economic injustice, and so it would seem to be in accord with sound ethical principles if the State compelled employers to enter into collective bargaining with the freely chosen representatives of their employees in the interest of more nearly equalizing the bargaining power of the workingmen of the world with the superior bargaining power of employers.

The need for collective bargaining arises from the fact that there is no equality of bargaining power between an individual workman and an employer. The workingman cannot afford to wait, because if he cannot sell his labor of today he can never sell it, and he is, therefore, frequently forced to accept unjust terms because he can get no better ones. On the other hand, an employer can afford to wait until he meets a workingman who is willing to accept his terms. Herein lies the marked superiority of the bargaining power of an employer. If, however, workingmen are united in unions and refuse collectively to accept unjust terms, the employer knows that he must pay fair wages and grant reasonable hours and working conditions because he is unable to secure employees on less favorable terms. Hence the social necessity of collective bargaining. It is, therefore, within the

proper function of the State if employers refuse to enter into collective bargaining with their employees to compel them to do so.

St. Viator College, JOHN W. R. MAGUIRE.
Bourbonnais, Illinois.

(b)—Negative View.

I enter upon this discussion without enthusiasm or warmth of conviction. In the process of making flour out of little grains of thought I am simply the nether stone, and all that is required of a nether stone is that it be hard and ponderous. I do not relish being hard and ponderous; but I have to furnish a track for the grinder.

I do not think that any strong demur can be made to the action of men who enter into labor unions as an aid to betterment in their mutual interests and a protection against the annoyances caused by inquisitive organizers. Even the United States Steel Corporation said, in 1919:[1] "Our Corporation and subsidiaries, although they do not combat labor unions as such, decline to discuss business with them. The corporation and subsidiaries are opposed to the 'closed shop.' They stand for the 'open shop,' which permits one to engage in any line of employment whether one does or does not belong to a labor union." And in 1920:[2] "The Steel Company does not object to its men belonging to the Union, or dealing with them in matters concerning local grievances, but it will not countenance the 'closed shop.' "

I think there would be still less resistance to the formation of vocational groups who are one in sympathy and interest. I mean those which Pius XI suggests in the *Quadragesimo Anno:*[3] "As nature induces those who dwell in close proximity to unite into municipalities, so those who practise the same trade or profession, economic or otherwise, combine into vocational groups."

[4]I think there would be little disposition to deny, in theory at least, that, as a workman has only one way of getting a living and supporting his dependents, his wages should reflect some consideration for himself, for his family, for his frugal comforts, for a little saving and the purchase of a home. The intrusion of large numbers of women into industry has clouded this consideration somewhat, by reducing the marketable price of labor for men, by narrowing the field of male labor and by depriving men of the economic housewifery which would contribute to their comfort and their savings. Nevertheless it will still be found true that [5]"it is by the work of workingmen that states grow rich." When men have no work, or when men have small pay, let states beware.

Looking in the other direction, no one will quarrel with the doctrine that the employer has a just claim to ratable profits. [6]"Those who are engaged in production are not forbidden to increase their

[1] Breen, *Sociol. Essays,* I, p. 204.
[2] *op. cit.,* p. 208.
[3] C. S. G., *The Social Order,* p. 38.
[4] *Rerum Novarum* (Apostolate), pp. 22, 23.
[5] *op. cit.,* p. 17.
[6] *Quadragesimo Anno,* p. 63.

fortunes in a lawful and just manner; indeed, it is just that he who renders service to society and develops its wealth should himself have his proportionate share of the increased public riches, provided always that he respects the laws of God and the rights of his neighbor, and uses his property in accord with faith and right reason."

The shaken condition of many employers will not be refused consideration in abatement of wages. [7]"The condition of any particular business and of its owner must also come into question in settling the scale of wages; for it is unjust to demand wages so high that an employer cannot pay them without ruin, and without consequent distress amongst the working people themselves." Indeed, the pervasive control of credit, making heavy drains upon the income of manufacturers for the engorgement of the few who manipulate the capital of the nation, frequently takes toll of the operators before it reaches the operatives, though eventually it reaches them both. Says Pope Pius: [8]"This power becomes particularly irresistible when exercised by those who, because they hold and control money, are able to govern credit and determine its allotment, for that reason supplying, so to speak, the life-blood to the entire economic body, and grasping, as it were, in their hands the very soul of production, so that no one dare breathe against their will."

The problem which we have left concerns the Catholic employer (Let us make him a miller) who wishes to safeguard his conscience, his business and the rights of his employees. He does not object to paying the men according to the scale which the unions have been setting, and he does not refuse union men a place in his shop or expel men who join the union. But he insists on making his contracts in severalty with his men. He allows them to make representations and remonstrances to him; but only as a shop committee, not as a union committee. He will not allow his shop to be closed to non-union men, and he will not accept union regulations as to hiring, discharging, discipining, promoting or replacing men. Yet he finds that is what collective bargaining has come to mean, and that that was meant by the now badly-punctured Wagner bill.

He recognizes that, where he cannot convince himself of the justice of the workers' claims or where they are not at one as to their claims, outside intervention and arbitration may be necessary. He does not feel that the government would be exceeding its authority if it made arbitration compulsory. He holds that a strike is a dangerous thing; but that men, acting in good faith as to the justice of their demands, may have to use that as a method of getting outside judgment on their case.

[9]But he does not see in trade unions, as at present constituted and operated, a reliable aid to workmen in stressing their moral obligations, in suppressing violence and preventing injustice, in affording proper liberty of work to workmen, in preventing class-hatred and patiently viewing the difficulties of the employer's situation.

[7] *op. cit.*, p. 33.
[8] *op. cit.*, p. 46.
[9] Leo XIII, *Letter to Am. Bishops*, Jan. 6, 1895.

He reads in Dr. Parkinson's *Primer of Social Science* that "a workman is free to remain outside an association until the civil authority has granted an exclusive patent to qualified members alone of a profession to exercise the functions of their craft. So, likewise, an employer is free to engage whom he chooses."

He has read a more elaborate statement to the same effect written by Father Paul Blakely, S. J., for *America* (Nov. 27, 1920). "First of all, the right of the employer to engage such helpers as he himself deems fit, independently of the presence or absence of union affiliations, must be granted. No reason can be adduced to show that he is bound either in charity or justice to favor an applicant with a union card, or to discriminate against an applicant without a card. It follows that attempts to force union or non-union men upon an employer are an infringement upon his right of free choice, and may easily become serious offenses against charity or even against justice. The right of an employer to engage a worker without reference to any union is fully as undoubted as the right of the worker to join a union or to refuse to join a union. Hence, the right of a union to force an employer to accept only union men does not exist. These points then seem clear:

1. There is no proof that an employer is obliged in charity or justice to discriminate in favor of a union man and against a non-union man or *vice versa*.
2. It is, therefore, the right of the employer to engage workers independently of their relation to a union.
3. Any attempt to force the employer to engage union or non-union men is an infringement upon the employer's right of free choice.
4. Such attempts may easily become offenses against charity or justice.
5. The rights of the worker to join a union or refrain from joining a union must be held inviolate both by employers and the union.

Our mill operator has taken note of many things which exist in aid of the worker, but which the unions do not take into their calculations for the wage-scale and other measures of shop management. The legislatures have already put into law a great many measures in favor of workmen, such as regulation of hours of work, provisions for their comfort, prevention of immorality, safety devises, legal favor in collecting wages, compensation for injuries, workingmen's insurance, old age pensions, widows' pensions, protection of women from standing, prolonged or strenuous occupations. Along with such legislation income taxes are levied on larger incomes almost to confiscation; laborers share in the general benefit from these taxes. Again, there is the mighty American school system—a vast contribution to the upbringing of the laborer's children, but carried in very small part by his contribution. There is the long period of schooling in the grades, in the high schools, in the universities—there are the free books, the medical services, nurses' services, specialists' services. There are the great libraries, a source of profit and enjoyment which the poor do not create for themselves.

But the record of trade unions, as he scrutinizes their activities

during fifty years, fills him with alarm. He does not find that the balance is held evenly, either in law or in public opinion, between the manufacturer and the operative. The States do not undertake any severe regulation of the unions. They do not have to be chartered. They do not have to be incorporated. They do not have to be in a position to pay damages for wanton destruction of property. They offer a livelihood to rowdies, jail birds and plug uglies; and they allow them to lay assessments upon legitimate businesses and to jeopardize important public services with the most arbitrary and vicious indifference.

In fact, this disregard of the third party, the public, is characteristic of union action and legislative action. We have had bakery strikes and gasoline strikes, and truckers' strikes, which bore upon the citizens of Cleveland with painful weight, but there was never any clarity as to what they wanted, or why a few desperadoes were allowed to cudgel men into idleness and mock at the misery of helpless citizens. There is no remedy for it. Workmen themselves cannot prevent it. And the criminals who thus practice on public distress hide away their guns and bombs while they march the streets as labor's champions.

Men of this stripe have tyrannized over small industries and have discouraged much constructive activity. In the building trades, the man who hopes to let a contract and get his building erected without a conflict with the labor unions is either an egregious optimist or a contributor to a business agent's comforts. No, not one business agent's comforts, but many business agents' comforts. Because the lathers may disagree with the tinners as to the proper jurisdiction over the piece of metal lath which is to conceal the electric wires, and the electricians are sure to go out when their right is overlooked, and they will be joined by the plumbers if the fixture goes through a bath room. If the owner dares to set his hand to any bit of work himself, he will find himself the panic-stricken foe of all the laboring force.

He becomes conscious of another marked abuse, in the slow progress with which his building goes up. He finds the bricklayers (who could lay six thousand bricks a day) are actually laying five hundred. They do it by regulation. Bricklayers are scarce and a very small number are admitted to apprenticeship. And many disabilities are put on men to keep them out of apprenticeship. So the field is narrowed against the union man and is narrowed against the employer. The job becomes elastic and the tradesmen stretch it until it breaks.

He cannot release himself from his predicament. He cannot get rid of an incompetent workman, he cannot escape the insolent agent, and he cannot drop off the original crew of workmen and hire a new one. He is sure to have his head broken; his windows will be broken; his plumbing stolen; his building bombed. Violence has come into trade-unionism with such general acceptance that any man who invites acquaintance with the union must be ready for bludgeons, bombs and blood. The use of violence in strikes has grown enormously, and their is no hope that it will decrease.

One reason for this is the red distemper which has infected unionism. The men who are prominent at labor meetings, the great orators, bibulous and blatant, get into office by windy statesmanship. But they have emulators and the rivals split open the ranks to the harm of public and workmen alike. They undertake to bid for the favor of the men. They can obtain a hearing best amongst the unskilled, aphasic and less law-abiding groups. They promise them the kind of organization in the shop which will give them the ownership of the shop. They will soon sovietize all industry. If the boss is too hard to manage it is easy to drop a bolt in a machine or to stay behind with the boss and come out last. The proletariat must rule and the union is the vanguard of the social revolution.

Such tugging to and fro, such abuse of workmen's minds and money, such reaches into politics, such manipulation of politicians and judges, such appeals to hatred amongst the people and amongst the workers have an effect which is altogether unhealthy for the body social.

The cost of industrial dislocation is not easy to appraise; but it can rapidly lump into large figures. Sargent's study *(The Cost of Industrial Disputes)* over the conflicts of eight years (1916-1923) revealed the effect in astonishing proportions. He rated the loss in days and in money. The loss in days was 401,121,681 as a result of strikes, and of 23,207,327 as a result of lockouts. The loss in money averaged annually over a billion and a half, and the total came to over twelve billions and a half. (Let Mr. Townsend beware of strikes.)

The legal remedies and machinery for clarifying disputes and repressing exploitation of laborers and employers do not exist at all, or so far as they do exist they must be applied by judges who are sensitive to popular favor or by jurymen who are all for the union man. The experience in Cleveland has been that the felonies of a labor agitator can be ever so black; he will not pay any penalty, or he will not be found guilty of a crime.

The factories which have yielded to benevolence or fear, and have accepted the closed shop, have not found their status altogether pleasant. Their foremen have been their worst antagonists. Their production has been slowed down. Their problems of diplomacy have been increased by the sensitiveness of various members of the union. Their hiring of laborers has been taken out of their hands and a heavy load of incompetent and grudging manpower has been gathered round their machines. They have found that there is left to them only the risks of their business, but that the union has taken control.

But I am engaged in an invidious task. I fear that the nether wheel is growing too ponderous. Let me pour out the grievances against the unions in one rapid indictment and have done. It runs thus:

Unions are but little regulated by law; they easily escape condemnation for their official acts and still more for the acts of their officials, which they adroitly disown. They have popular favor when opposed. They have jury's and judge's favor when brought into

court. They allow individual members to escape without punishment for acts of injustice, and make it possible for racketeers to prey upon operators and laborers at once. Their organization is begun by obscure agitators and their bent turned to radical activities by men with wild admiration for the Third International and exuberant hopes for a seizure of other men's property. They have not delimited their fields of jurisdiction, and they have made those who deal with them suffer for their own disputes. Even the American Federation of Labor is unstable in its mode of organization after these many years, and the Lewis move seems to be accordant with socialist conceptions of the sweeping industrial seizure. They have not kept their officers from making the large salaries which they object to in the officers of the corporations. They have not considered the public interest in calling strikes; they have caused losses and misery to the poor and they have inflicted harm which can never be made up. They have often been unsure as to what their demands were, and have forced men into strikes without giving them fair information about their cause. They have aimed at evicting all non-union laborers from jobs and have subjected them to ridicule, threats, bodily violence, property loss. They have sought control of the shop when given recognition. They have charged their members heavy fees without need. They have interfered in numberless acts of private enterprise and have cut off their own members, in large measure, from the skilled occupations. They have not been more successful, rather they have been less successful, than shop groups in winning recognition of their demands.

They have used the appeal of the sympathetic strike with woeful disregard of the rights of inoffensive employers. They have not been reliable in the keeping of contracts where they have been given recognition. They have been a clog on output. They have even refused to work with tools and materials produced in other places by non-union labor. They have given almost no heed to the philosophy of conscience and of spiritual responsibilities; and even their Catholic members have followed the way of expediency without seeking instruction as to their moral obligations. And, standing out as a fact which is startling in its suggestiveness, the unions have not enlisted one-tenth of the workers in our factories, and they still wish to appropriate the whole labor program of all productive plants.

Let me repeat what I said at the beginning. I am only doing the work of the hard and ponderous nether stone. I am merely helping the upper stone to grind out some flour. I hope he may succeed. I am sure I have been hard and ponderous enough. And now I have done.

JAMES M. MCDONOUGH.

St. Mary's Seminary,
Cleveland, Ohio.

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Summary of Discussion in Division B.

Father Cronin, of St. Mary's Seminary, Baltimore, opened the discussion by observing that the speaker for the negative falsely predicated the isolated evils of the particular groups of unionism as a whole. He added, however, that Msgr. McDonough brought out well the principle that the employee was just as selfish, greedy and short-sighed as the employer. He also touched Father Maguire's paper in his criticism, stating that the only realistic method of labor is an equally dominant union.

Mr. J. W. Curran, of De Paul University, Chicago, arose to make the observation that collective bargaining in no wise depended upon unionism, and in confirmation of his statement he cited a Chicago case in which a neighborhood group appealed to the court to force a certain employer to collective bargaining. He also broached the question of the constitutionality of the Wagner Labor Dispute Bill, showing the diverse legal and ethical attitudes of different courts throughout the country.

Very Reverend Francis A. Walsh, O. S. B., Ph. D., of the Catholic University, Washington, D. C., submitted the question whether collective bargaining was not making for the fixed and determinate stratification of society; and what advantages legal enforcement of collective bargaining had over state fixation of wages.

This gave Father Maguire an opportunity to answer objections raised. Before answering Dr. Walsh, he asked whether we were not running into an *ignorantia elenchi* by dwelling on the merits or demerits of unionism, whereas the problem under consideration was whether the state can enforce collective bargaining. Nevertheless, he took the opportunity to reply to the indictments which the Msgr. raised against unions, pointing out that ninety-nine per cent of the cases of violence were started by "under-cover men" put into the union by employers themselves. His twenty years of wide experience in labor problems provided him with many forceful examples to substantiate his position. He also answered the charge that "the courts of the country favor labor unions," stating the very opposite to be true. As to "the infiltration of communism" into labor unions referred to by his opponent, Father Maguire protested that "no one outside the Catholic Church more vigorously opposed communism than the American Federation of Labor."

In answer to Dr. Walsh's queries Father Maguire observed, in the first place, that stratification of society does already exist in no small degree, but that this does not constitute a serious evil of collective bargaining, since we find that the sons of union members are rising in the social scale.

Secondly, collective bargaining is preferable to wages fixed by the state, because in cases of economic necessity wages can be more quickly changed by collective bargaining than by state legislation.

Father Fialko, of Pittsburgh, arose and asked whether the problem of inequality existing between the employer and the employee did not frustrate collective bargaining.

To this Father Maguire answered that unionism tends to equalize bargaining power.

Father Fialko: Then you postulate a union?

Father Maguire: Absolutely.

Father Walsh asked whether a vertical union is necessary for collective bargaining.

Father Maguire answered that he did not think so, for "no union is necessary for collective bargaining." Yet he added that we need both industrial and craft unions. Industrial unions are necessary for most of the larger industries, craft unions for smaller factories and the building industry.

Mr. Curran, of De Paul, brought up the legality of compelling employers to accept collective bargaining. This granted, why is it not possible for the court to force the employee to work?

Father Maguire answered that the latter case involved a fundamental human right—the freedom of human will.

Father Cronin added that this question of compelling the employer to accept collective bargaining had been settled affirmatively twenty years ago in Europe, so we are not granting anything new, but merely acknowledging a right already possessed.

At this point Father Maguire presented a question which he thought might be worthy of discussion at next year's session. Essentially the question is: "Has the employer the right to start a business and close up when he pleases; or is it ethical for the government to force such an employer to continue in operation when the closing of his business would deprive many of their only means of livelihood?"

Dr. Walsh expressed his opinion that this question had already been answered long ago, and that the right existed.

Mr. Curran again asked for a solution of his previous question concerning the ethical right of the state to force employees to work. He exemplified his problem by citing a case of a Chicago theatrical troupe.

Father Cronin reminded him that since it was a matter of contract the contractors were bound to abide thereby.

Mr. Schneider objected, claiming that contracts are one-sided.

Mr. Schneider then gave his views on economics in general, stating, among other things, his indifference to labor unionism, and from his own practical experience expressed his belief that "it is up to the individual to work out his own salvation."

Father Maguire responded that such a philosophy is workable for a few individuals but not for the mass of workers.

Mr. O'Neil ended the discussion by offering a solution of Mr. Curran's case, stating that there was an existing law covering the contracts of theatrical troupes.

The Chairman, Reverend A. E. Lyons, of Toledo, expressed his thanks to the speakers and those who took part in the discussion.

Thereupon the meeting adjourned.

Our Lady of Angels' Friary,
Cleveland, Ohio.

JASPER MAUSS.

DIVISION C: Epistemology. *Chairman*, CYPRIAN EMANUEL. *Leaders*, JOHN J. TOOHEY AND JOHN F. CRONIN.

Problems: *(a)* The Influence of the Structure of Language upon Philosophic Theory. *(b)* Cardinal Newman's Theory of Knowledge.

PART I—*(a)* as above.

The common possession of all schools of philosophy is language. This is their great point of contact. In view of the interminable squabbles which have existed among them upon every question under the sun, one might be tempted to pronounce it their only point of contact; but that would be an exaggeration. Anyhow, since it is their common meeting ground, one would think that they would have come to some agreement as to its interpretation, and that the interpretation would be the right one. The tragedy is that they *have* come to an agreement, but they have agreed to misinterpret it. The misinterpretation began with the ancient philosophers, and the identical misinterpretation has persisted down to this day. The man in the street does not fall a victim to this misinterpretation, and it is a curious fact that the philosopher himself is free from it except when he dons his robes of office and speaks *ex cathedra*. The present writer does not exempt himself from this general indictment. He has had errors of his own to correct. It is the misinterpretation of language which has set the philosopher the bulk of his problems, and in his efforts to solve them he has allowed himself to espouse the wildest extravagances. How are we to extricate ourselves from this tangle? There is only one expedient that is open to us, and that is, to submit ourselves to the humble drudgery of studying the structure of language. The thing to which we have to accustom ourselves most of all is to dissociate what is literal from what is not literal in the language that is constantly on our lips.

In a paper which the present writer published a year ago[1] he devoted considerable space to the interpretation of the abstract term, and in the course of the paper he maintained that of the following six expressions the first and the second are literal and the remaining four are not literal: 1. The house of John Brown; 2. Brown possesses a house; 3. The body of John Brown; 4. Brown possesses a body; 5. The acuteness of John Brown; 6. Brown possesses acuteness. He did not pause to justify the use of "literal" and "non-literal" in their application to these expressions. A few lines may be set down here in defence of their use. A word is used non-literally when it is used as a significant word and yet that is not present which it is the proper function of the word to signify. When a preposition or a verb like "to possess" occurs between two nouns, it is its function to signify a relation. Now, there cannot be a relation unless the nouns stand for objects which are distinct from each other. If there is a doubt

[1] "The Philosopher's Evil Genius," *Thought*, June, 1934.

as to whether the nouns stand for distinct objects, there is a doubt as to the existence of the relation. You cannot have a relation or a distinction if one and the same object is at both ends of what purports to be a relation or a distinction. It is common to speak of the relation of whole to part and of part to whole. But there cannot be such a relation. There is a relation of part to the rest of the whole, but not of part to whole. You cannot have the whole without the part, and the part cannot be at both ends of the relation.[2] In like manner, before you can maintain that the fifth and the sixth of the above examples are literal, you will have to prove that "acuteness" stands for a physical object, and that this object is distinct from John Brown. There is no difference in the meaning of the two following sentences: "Jones admitted that John Brown is an acute being;" "Jones admitted the acuteness of John Brown." The expressions, "John Brown is an acute being" and "The acuteness of John Brown," have here the same meaning and, therefore, "acuteness" and "is an acute being" have the same meaning.

We might allude here in passing to the confusion in which the words "time" and "space" have been enveloped by the philosopher, and this, from the mistaken notion that he was dealing with literal language when, in matter of fact, the language was not literal. He has accepted as literal such expressions as "bodies in space," "bodies moving through space" and "events happening in time;" and this has led him to speak of "the concept of time" and "the concept of space" and even to imagine a cross-breed of time and space which he has called "space-time." He is not entitled to interpret the foregoing expressions as literal till he has proved that each of the words "time" and "space" stands by itself for an object. It is not an inalienable right of a noun to stand for an object. "Absence" does not stand for an object, and yet it is a noun.

The abstract term has been the chief source of the philosopher's troubles. Next to the abstract term as a trouble-maker, we might place the use of the general term in the singular when literal accuracy requires its use in the plural. It is proposed in the present paper to deal with this second point, though the approach to it will doubtless seem to be somewhat circuitous. Much of what follows is apt to have the appearance of a chapter out of a text-book. The nature of the subject we are going to discuss seemed to dictate this mode of presentation, and it has been adopted in the interests of brevity and clearness. Unless we make clear the sense in which we are going to use certain terms, we shall expose ourselves to misapprehension.

The subject of definition is of such essential importance in philosophy that we may be permitted one or two remarks upon it. If there is one canon of definition which should be put down as sacred, it

[2] Sometimes it is said that the part is "inadequately" distinct from the whole, and the reason assigned is that, since the part is not the whole, the part must be distinct from the whole. But to say that the part is not the whole is merely another way of saying that the part is not the part plus the rest of the whole, just as one apple is not that apple plus another apple. To say that the part is not the part plus the rest of the whole is a roundabout way of saying that the part is not the rest of the whole, and, of course, the part *is* distinct from the rest of the whole.

is this: The terms which are to be employed in the exposition and proof of a system must not be defined in such a way as to assume the truth of that system. If this canon is violated, the persons who are not already adherents of your system—even the most open-minded among them—will not listen to you. Supposing a text-book defines "term" as the verbal expression of an idea, after having defined "idea" as a mental representation; that text-book is begging the question in favor of the representative theory of knowledge. If it defines "simple apprehension" as an act of the mind by which it represents an object, the text-book is again begging the question in favor of that theory. The present writer has not been without blame in this matter. It is not unusual for an author to say that a judgment is an act of the mind, and then to define "proposition" as the verbal expression of a judgment. When he presents us with an example of a proposition, we find that it does not stand for an act of the mind at all, but for an object which is as solid and independent of us as the Rocky Mountains. If "general term" were defined as the verbal expression of a universal idea, we should have to inquire what was meant by "universal idea," and whether the representative theory was not again being assumed to be true. In the present paper it is claimed that a certain kind of term does not stand for an object. This might provoke the question: "Do you not mean a merely external object?" In order to assure the questioner that this is not our meaning, we have to define the word "object." And then we come upon the well-known technical terms, "material object," "formal object" and "simple apprehension," which play such an important part in philosophy, and which must be defined in such a way as to forestall all chance of legitimate objection. Finally, if a definition is couched, for convenience sake, in language which is not literal, it must be subjected to the test of reformulation in literal language. If it will not endure this test, we know that something is wrong, and we must make it our business to discover what is wrong.

What is it, then, which is presupposed by all systems of philosophy, which all philosophers are justified in taking for granted, and to which, therefore, we have a right to appeal in the construction of our definitions? Three things in particular may justly be placed among the presuppositions of philosophy, viz.: (1) language, (2) objects, and (3) man's power of attending to the objects. Anything over and above these three which the philosopher may put forward in the development of his system must clearly belong to the other presuppositions of philosophy or he must prove his right to put it forward. It is plain that we are setting up an ideal for philosophical definition. Whether this ideal has been achieved in the definitions which follow, may be left to the judgment of the reader.

An *object* is that which is or can be contemplated. "Contemplate" is here used as synonymous with "attend to," "advert to" and "notice." When we contemplate many objects by means of one act of contemplation, the many objects are commonly called the object of our con-

templation; that is, though many objects are contemplated, the word "object" is used in the singular, because the many objects are contemplated by one act.

The *material object* of a cognitive act is that which confronts the mind and possesses a variety of attributes; for example, an object which is a horse or an object which is a table. "Possesses a variety of attributes" is an abstract and non-literal way of saying "is such and such and such . . ." When it is said that the object possesses a variety of attributes, it is not meant that the total number of attributes is before the mind, but that the object which confronts the mind possesses a large variety of attributes, though only one or two of these attributes are present to the mind when the object is contemplated.

The *formal object* of a cognitive act is that in the material object upon which the act concentrates. In rigorous accuracy, the definition should read: The formal object is the material object so far as it is *such* an object or merely so far as it is an object. For example, if the mind concentrates on the table so far as it is brown, then the formal object of the cognitive act is the table so far as it is a brown thing. It is sometimes said that in this case the formal object is the brownness of the table. This is a handy way of wording it which has its uses, but it is not literal. The trouble with this wording is that it has repeatedly misled the philosopher into interpreting it as literal. Literally speaking, the formal object is not the brownness of the table, but the table so far as it is a brown thing. Sometimes we contemplate the object merely so far as it is a table, without thinking of it as brown or as wooden, and then the formal object is the object so far as it is a table.

An *apprehension* is an act of the mind by which it contemplates one or more objects.

A *complex apprehension* is an act of the mind by which it contemplates an accepted or a suggested object of a judgment or of an inference. What is expressed by the words, "The sun is self-luminous," is an accepted object of a judgment. An accepted object of an inference is expressed by the words, "If the Hudson River is frozen, then the weather has recently been cold." What is expressed by the words, "the Hudson River is frozen," in the foregoing proposition is a suggested object of a judgment. It is called a "suggested object" because, as it is expressed in that proposition, it is not or need not be accepted by a judgment. The same thing is true of what is expressed by the words, "the weather has recently been cold." The expression, "accepted or suggested object of a judgment," may, for convenience, be shortened to "object of a judgment."

The words "judgment" and "inference" are used here in the sense of acts of the mind. Thus, we say that a man judges and infers, meaning thereby that he is performing acts. Now, language does not express acts of the mind; it expresses that towards which the acts are directed; that is, it expresses the *objects* of the acts of the mind.

Our acts of thinking, such as apprehension, judgment and inference, must become objects of thought before they can find expression in words. Of course, we do not literally think about acts; we think about ourselves acting. Language, therefore, is not the expression of thought, if "thought" is used in the sense of an act or process of thinking; language is the expression of the *object* of thought; in other words, it expresses what we are thinking about. The purpose of speech is to direct the attention of others to the objects which are before our own minds. Roughly, then, a *judgment* is an act by which we accept what is normally expressed by a categorical proposition; and the act by which we accept what is normally expressed by a hypothetical or an equivalent proposition is an *inference*. But we cannot accept anything without first contemplating it, and the act by which we contemplate what is expressed by a proposition is called a complex apprehension.

A *simple apprehension* is an act of the mind by which it contemplates an object that is not an object of a judgment or of an inference. For example, the act by which the mind contemplates what is expressed by the word "men" or "horses" or "Plato" or "the Hudson River" is a simple apprehension. Simple apprehension may also be defined as an act of the mind by which it contemplates what is normally expressed by a concrete term. There is no need here to discuss the question whether there can be a simple apprehension without a complex apprehension. However the question be decided, it will be useful to be able to refer to a simple apprehension, just as we refer to the subject of a proposition.

If we use the word "idea" as synonymous with simple apprehension, there can be no controversy over ideas; for all philosophers agree that there is such a thing as contemplation, and there can be no contemplation without an object that is contemplated. In this sense, when we say that we have an idea of an elephant, we mean that we have an apprehension of an elephant; that is, that we are contemplating an elephant. A universal idea will then mean a universal contemplation, that is, an act by which we contemplate all the objects of a class or all objects whatever. It is only when "idea" is used in the sense of a mental image or of a Platonic Idea that we have a controversy on our hands, and the controversy presupposes throughout that we have a universal idea in the sense of a universal contemplation.

A *term* is a categorematic word or a combination of categorematic words which may stand as a significant combination in the subject or predicate position of a proposition. Nouns and most adjectives are examples of categorematic words. According as we have a single categorematic word or a combination, the term is called simple or complex. "White men" and "men who have sailed the ocean" are examples of complex terms.

A *concrete term* is a term which stands for an object and nearly always describes and limits it; for example, "horse" stands for an object and describes it sufficiently to enable us to distinguish it from

other objects. If we insist upon literal exactness in the definition, it may be worded thus: A concrete term is a term which stands for an object and nearly always stands for it so far as it is *such* an object. We say in the definition that a concrete term *nearly always* describes an object, because there are some concrete terms which do not describe the object or objects for which they stand; for example, "thing," "being," "object," "entity." These four terms have, therefore, no connotation, though they have denotation.

An *abstract term* is a term which stands for a description without an object that is described; for example, "honesty" and "patriotism." Hence, an abstract term has connotation, but not denotation. This definition is sufficiently wide for present purposes. If it were meant to apply to such general abstract terms as "attribute," "quality" and "characteristic," it would require alteration. These are general terms for what is signified by the ordinary abstract term. "Act," "action" and "event" are general abstract terms of narrower application. The universal mark of an abstract term is that it does not by itself stand for an object and, therefore, it cannot be used alone in the predicate position of an affirmative proposition in which the subject stands for an object. The function of an abstract term, like that of a preposition, is to fill out a context; and it is some other word in the context, or it is the context taken in its entirety, that stands for an object. We are assuming all along that the language is neither figurative nor elliptical nor merely suggestive.

When a term has both denotation and connotation, the two combined constitute the *meaning* of the term. In case a term has no connotation, its meaning is constituted by the denotation alone; and the connotation alone constitutes the meaning of a term that has no denotation. If we make a distinction between "meaning" and "implication," the meaning of a term or a proposition is that which is necessarily before the mind when the term or the proposition is understood. This may, for convenience, be called the *conventional* meaning of the term or the proposition. When the term which stands for a given object is introduced into a discussion, a man who has made a special study of the object will frequently have much more before his mind than the ordinary man, but he must have before him at least what is present to the other participants in the discussion; otherwise there will be no common understanding of the subject. In the pragmatist's use of the word "meaning," it comes close to being the same as "importance," as when we say that a son's success in life *means* much to his parents. This may be designated the *pragmatic* meaning. If "meaning" has this interpretation, then the meaning of a proposition is the importance of what is before the mind when the proposition is understood. The importance or pragmatic meaning may at times vary with the individual, but the conventional meaning cannot thus vary if there is to be intelligent discussion.

In what follows we shall be dealing with concrete terms and we shall assume that they are used univocally.

A *general term* or *name* is a term which is used both in the singu-

lar and in the plural or which is equivalently used in both ways. The word "gold" is used only in the singular, but it is equivalently used in the plural when we say "Some gold is found in California and some gold is found in Alaska." The word "scissors" is used only in the plural, but it has what is equivalent to a singular use when we say "These scissors were made in the United States and those scissors were made in Canada." It is of the nature of a general concrete term that, when it is used in the plural or is equivalently so used, it stands for objects which are distinct from each other and emphasizes the fact of their distinction. A good test of a general concrete term is that it may take the signs "some" and "most" immediately in front of it.

A *class* is many objects possessing a common characteristic which is not possessed by other objects. Or we may put it in this way: A class is many objects which are similar to each other in a characteristic which is not possessed by other objects. If we exclude all but literal language from the definition, it will run as follows: A class is many objects which are similar to each other and which, so far as they are similar, are each of them such as other objects are not; for example, the class of men. Each object possessing the common characteristic is called a *member* of the class.

A *class name* is a term which, when used in the subject position in the plural and without qualification, stands for a class and, when used in the singular, stands for a member of that class. "Man," "rose," "elephant," and most general concrete terms are class names. When we say "without qualification," we mean not merely that no qualification is expressed, but that there is no qualification suggested by the context or by the circumstances in which the class name is used. It should be remarked that, when the class name stands for a class in the subject position of an affirmative proposition, the predicate, if fully expressed, is also commonly in the plural when it is a class name; for example, "Roses are flowers."

There are some expressions which may seem to conflict with this definition of a class name. Thus, we say "Man is mortal" and "The horse is a quadruped." Here "man" and "horse" are used in the singular, and yet each of them stands for a class and not for a member of that class. But these are turns of expression which are employed in place of the more exact literal expressions, "Men are mortal beings" and "Horses are quadrupeds." That this is the true account of the matter is evident when we attempt to use the propositions in a syllogism. We do not express ourselves in this fashion: "Man is mortal, John is man, Therefore John is mortal;" "The horse is a quadruped, This animal is the horse, Therefore this animal is a quadruped." We do not say "John is man" or "This animal is the horse." We say "John is *a* man" and "This animal is *a* horse;" and this is equivalent to saying "John is a member of the class of men" and "This animal is a member of the class of horses." Consequently, the correct literal wording of the major premise is "Men (or all men) are mortal beings" and "Horses (or all horses) are quadrupeds." This would be still more manifest if the minor premise were "John and Peter are

men" and "These animals are horses." It is true that in Latin there is no indefinite article and that we say "*Joannes est homo*," and this might seem to support the literal accuracy of "*Homo est mortalis.*" But the inadequacy of this suggestion is apparent when we refer to more than one person. We may say "*Joannes est homo*" and "*Petrus est homo*," but we do not say "*Joannes et Petrus sunt homo;*" we say "*Joannes et Petrus sunt homines.*" If we had the syllogism, "*Homo est mortalis, Joannes et Petrus sunt homines, Ergo Joannes et Petrus sunt mortales*," it would be evident that the major premise should read "*Homines sunt mortales*" or "*Homines sunt entia mortalia.*"

On the definition given above, the following general terms are not class names: "thing," "entity," "class," "sort."

Two points are to be noticed about a class name when it is used in the plural: first, it stands for objects precisely so far as they are *similar* to each other; secondly, it stands for them so far as they have each a *characteristic which is not possessed by other objects.*

The word "thing" or "entity" does not come under the definition of a class name. When "thing" is used in the plural, it does, indeed, stand for objects so far as they are similar to each other, but it does not stand for them so far as they have each a characteristic which is not possessed by other objects. This is also true of "being" and "object." "Reality" might be added to the list, but this word calls for special consideration. Some of these words have an abstract use as well as a concrete; thus, we say "The reality of the sun's expansion and contraction has been disputed." But the use of these words as abstract terms does not belong to the present discussion.

The word "class" fails to satisfy the definition of a class name, as is obvious. When used in the plural, it does not stand for a class, but for classes. When used in the singular, it stands for a class, and not for a member of that class. Again, when "class" is used in the plural, it stands for objects so far as they are *different* from each other; for the characteristic mark of each class is different from that of every other class. When we speak of two classes, we mean that the objects in the one class are different from those in the other. But when we speak of two men, we do not mean that they differ from each other. Doubtless they do differ from each other, but the fact that they differ is not brought out by calling them two men, and we could still speak of them as two men even if they resembled each other in every particular. On the other hand, the fact that the objects in the one class differ from those in the other *is* brought out by speaking of them as two classes. If they did not differ from each other in the characteristic which marks them as members of their respective classes, they would not constitute two classes, but one. The only reason why we can use the word "class" in the plural at all is that, though the classes differ from each other, the characteristic marks of the classes are not mentioned. When the characteristic mark of a class is mentioned, the word "class" has to be used in the singular. Thus, we speak of the class of men and the class of ruminants. We do not speak of the *classes* of men, unless, indeed, we have in mind certain

sub-classes, and then the reason which warrants our using "class" in the plural is that we have failed to designate the characteristic marks of the various sub-classes.

Every class is constituted such by its characteristic mark. Hence, there can be no such thing as a class of classes, that is, a class which should have all other classes for its members. There are two reasons for this, or rather, two ways of stating the one reason: first, because the class of classes could not have a class name; secondly, because it could not have a characteristic mark which is not possessed by objects outside of it; in other words, there would be no objects outside of it, and this means that it would not be a class. This point was overlooked by the man who invented the paradox of the class of classes. Another point he failed to notice was this: If there were such a thing as a class of classes, it would be constituted by all *other* classes, not by all other classes plus the class of classes. To say that it was constituted by all other classes plus the class of classes would be the same as saying that it was constituted by all other classes plus all other classes; and then, to be consistent, you would have to say that the class of men was constituted by all men plus all men. A class is constituted by its *members*, not by the class itself in addition to its members. It must not be forgotten that, in literal accuracy, the word "class" should be used in the plural when reference is made to more than one class.

It will be noticed that there is a wide difference between a class and a collection. One collection may be similar to another in the characteristic which constitutes it such a collection; for example, an army. But one class cannot be similar to another in the characteristic which constitutes it such a class. It is true that the individuals in an army are not only a collection; they are in a sense a class as well. Let us give a name to the army and call it Army A. When the individuals in the army are considered as a class, the class name is not "army," nor is it "Army A;" the class name is "soldier of Army A;" and "soldier of Army A" must be used in the plural if it is to stand for the class. You have a literal designation of a class by means of a class name only when the name is used in the plural or is equivalently so used.

The moral of the present discussion might be developed at some length, but we shall content ourselves with two remarks. First, consider the artificial atmosphere of mystery and solemnity with which the philosopher has surrounded such words as "substance" and "being" and "reality" by printing them in the singular and adorning them with a capital letter. Let the capital letter be banished, and let the words be printed in the plural or, if they must be used in the singular, let them be preceded by the indefinite article; and then, if any mystery still clings to them, at least it will not be mystery of our own creation. The second remark may take the form of a question: If we make it a point to employ the class name in the plural when we are referring to a class, and if we are careful to substitute for the abstract term its literal equivalent, how are we going to pro-

pound the problem of universals? That there is a universal idea in the sense of a universal contemplation is obvious. If the philosopher claims that "universal" means more than this, it is his duty to justify his claim. If he maintains that "universal" means a universal representation or a Platonic exemplar, he may be challenged to produce instances of his universals, to construct his definition of "universal" in accordance with these instances, and then to prove in literal language that he is entitled to the definition which he has constructed. The besetting sin of philosophy from its first beginnings has been an irritating vagueness and looseness of expression, accompanied by a tendency to let assumption serve in the place of proof. This is the very antithesis of the scientific habit, and philosophy must free itself from this reproach if it is to vindicate its claim to lay down the law for the other sciences.[3]

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PART II—*Cardinal Newman's Theory of Knowledge.*

Problem: Cardinal Newman and Scholastic Epistemology, a discussion of "real assent" in the light of the Scholastic theory of abstraction, and of the "illative sense" and "implicit reasoning" as acceptable intellectual approaches to truth.*

Scholastic philosophy has not as yet achieved a definitive evaluation of Newman's thought. No generally accepted judgment upon the content, orthodoxy or value of his philosophy is available to the student of *The Grammar of Assent* or *The Oxford University Sermons.* It may well be that this *lacuna* results from the serious difficulty of understanding the real teaching of *The Grammar.* Thus the venerable Oratorian scholar, Father Bacchus, tells us that:

> According to outward appearances *The Grammar of Assent* is one of the most obscure books that has ever been written. Distinguished philosophers have been known openly to avow that they could make nothing of it, and, without being so outspoken, its critics betray the same sense of obscurity by the eagerness with which they fasten upon irrelevant side issues

[3] The common saying, that science is not concerned with the individual but with the universal, is ambiguous and misleading in the mouth of the philosopher. A clearer and more accurate statement would be, that science is not concerned with the individual but with the class. Or still better: Science is concerned with the class, and with the individual only so far as it is a member of the class. *Existing* members of a class may change, but the class itself does not change. The essential requirement for membership in a class is that an object shall be similar in the class characteristic to the other members of the class. Except in the case of a class which is composed exclusively of existing individuals, the class is unaffected by the existence or non-existence of its members. That is why the class is unchangeable, for only existing things change; and, in general, that is why there is such a thing as a science.

*This paper is based on the writer's doctoral dissertation at The Catholic University of America entitled *Cardinal Newman: His Theory of Knowledge.* The permission of the University to use this material, and the assistance accorded the writer in the original research, particularly by his major professor, Very Reverend Doctor Francis Augustine Walsh, O. S. B., is gratefully acknowledged.

when discussing it, or by the vague, non-committal character of their utterances.[1]

When scholars encounter such obstacles in understanding the content of Newman's philosophy, it is not surprising that their conclusions should vary widely. At one extreme we find the Abbé Dimnet, who asserts that Newman is no philosopher, and at the other we discover such thinkers as Fathers Pryzwara, Maher and Walker, who feel that Newman's thought contains elements of enduring value.[2] Between these extreme views lie many shades of opinion. Father Harper, although he praised many points in *The Grammar of Assent*, felt called upon to correct grave errors. Years later the modernists claimed the great Oratorian as their spiritual progenitor, and were rebuked for this insolence by Pius X. Today many Catholic scholars doubt that Newman's thought can be assimilated into the *cadre* of Aristotelian tradition, while others, on the contrary, style his thought as the true and logical development of Peripateticism.

Since this obscurity regarding the true teaching and the orthodoxy of *The Grammar* is felt by many, it is not surprising that the question of the philosophical stature of its author is still disputed. One view is presented by the late Bede Jarrett, who considered Newman "of the band and stature of St. Thomas Aquinas, St. Jerome, or of any Father of the Church. The Fathers of the Church were the companions of his musings until he became one with them in fellowship."[3] Döllinger felt that he was one of the great historical theologians of the 19th century. On the other hand, the comparative neglect of the great teachings of *The Grammar* and *The University Sermons* on the part of the average scholastic writer shows that these lessons have not been widely assimilated, and perhaps that they are even rejected.

Newman approached the problems of epistemology in a personal manner. Instead of the customary defense of realism, he gives an analysis of the actual workings of human thought. He is expository rather than apologetic, positive rather than combative. He would defend religion from the attacks of empirical philosophers by following the method of experience more faithfully than they.

By a faithful analysis of experience, Newman developed the two doctrines which are the subject of the present discussion: the analysis of the "real idea" and of "implicit reasoning." The doctrine of the real idea is derived from a radically new treatment of the problem of abstraction, while the defense of implicit reasoning is based on a novel view of the complexity of the reasoning process.

The traditional theory of abstractive apprehension need not be explained in detail. According to Aristotelian and Thomistic philosophy, the mind de-individualizes the singular, thus attaining to the universal essence. It would be no exaggeration to say that histori-

[1] Francis Bacchus, "How to Read the Grammar of Assent," *The Month*, 143 (1924), 106.

[2] Cf. Ernest Dimnet, "Quelque Aspects du Cardinal Newman," *Revue du Clergé Français*, 34 (1903), 458-459; Erich Przywara, *Kardinal Newmans Christentum* (Freiburg, 1922); Michael Maher, *Psychology* (New York, 1926), 324-325, 332; Leslie Walker, *Theories of Knowledge* (New York, 1924), 647.

[3] Bede Jarrett, Introduction to J. D. Folghera, *Newman's Apologetic*, trans. Philip Hereford (London, 1928).

cally and philosophically this theory is basic in Scholastic philosophy. Newman calls attention to this process when he insists that the mind is ceaselessly active, comparing, criticizing, analyzing and referring to a standard the manifold phenomena of the external world. The mind groups and discriminates, measures and classifies, thus "rising from particulars to generals, that is, from images to notions."[4] Nevertheless these notions, these universal ideas, are not entirely commensurate with reality. Real things cannot be dissected into every possible general notion, nor can any real thing, accordingly, be constructed and recomposed from general notions. One can say with truth that every created being is beyond man's comprehension. Each individual is incommunicable. The man of the logic books is not met on the streets.[5] Logic uses words in a manner which robs them of much of their meaning.

> Words, which denote things, have innumerable implications; but in inferential exercises it is the very triumph of that clearness and hardness of head, which is the characteristic talent for the art, to have stripped them of all these connatural senses, to have drained them of that depth and breadth of association which constitute their poetry, their rhetoric, and their historical life, to have starved each term down till it has become the ghost of itself, and everywhere one and the same ghost, "*omnibus umbra locis*," so that it may stand for just one unreal aspect of the concrete thing to which it properly belongs, for a relation, a generalization, or other abstraction, for a notion neatly turned out for the laboratory of the mind, and sufficiently tame and subdued, because existing only in a definition.[6]

Accordingly, the abstractive process is by no means the ultimate in knowing. While it gives man the universal idea, thus raising him above the brute, it does not exhaust reality. In fact, the aspect of reality which it neglects is vital, most full of meaning and value. Thus the schoolboy learns words, and only life will teach him things. Men value this real knowledge more highly than they do mere abstractions. Even such apparently abstract disciplines as philosophy are occupied with the quest of reality. The path of the philosopher is one of increasing realization as he attempts to grasp the limitless riches of the real. Often he is bound to confess, with Bergson, that his ability to express is inferior to his ability to comprehend.

As a result of his analysis of the notional, we can begin to comprehend the meaning of the real idea which Newman values so highly. It is an intensive rather than an extensive grasp of the real. It tends to approximate the complexity of the singular thing. Thus, for example, the preacher talks theology, while the saint lives God. Since this real idea is colored by the entire psychic life of the individual and clothed with the rich texture of feelings, emotions, memory and imagination, it is an important instrument of life. It leads to action, as speculation tends to lead from it. It excites and stimulates the great motive forces of the human heart.

[4] Newman, *Grammar of Assent* (New York, 1930; first published 1870), 31; cf. *ibid.* 30, 34.
[5] *op. cit.*, 31; cf. *ibid.*, 49, 282-283.
[6] *op. cit.*, 267.

> They [real ideas] have given to the world men of one idea, of immense energy, of adamantine will, of revolutionary power. . . . Persons influence us, voices melt us, looks subdue us, deeds inflame us. Many a man will live and die upon a dogma, no man will be a martyr for a conclusion.[7]

The real idea, accordingly, differs in a striking manner from the notional, universal idea. The one is concrete, individual and particular; the other is abstract, general and universal. The real is personal and incommunicable, symbolized by the intuitions of the artist; the notional is impersonal and common to all, symbolized by the formulas of the scientist. The problem before us is to decide whether these are complimentary or contradictory notions. Are we to dismiss the real idea, with Baudin, as an empiricist glorification of sense perception? Shall we consider it another name for the percept, shared with the brute, or shall we call it an intensive apprehension of a concrete thing, which follows perception and abstraction? Newman, of course, would take the latter view. He would point out that the schoolboy first learns formulas and notions, then he gradually *realizes* the things implied in these words. The real idea is not the product of the uncultivated but of the cultivated mind. It is the dabbler in science and philosophy who uses words, while the research scholar deals with things. Unreal discussions are the product of the novice, while those who speak of things are those who have penetrated reality, such as the mystic, the poet, the sufferer and the philosopher.

Recent and contemporary philosophers have stressed ideas analogous to those of Newman. When Schiller and James insisted that there is a personal element in truth, and that pure abstraction cannot solve the problems of life, they carried to an extreme an analysis developed in *The Grammar of Assent.* Likewise the organic living power of a valid idea is no more insisted upon by Dewey than by Newman in his *Essay on Development.* Again, Blondel feels that the concept does not give us an intimate grasp of reality. He would assert that Aristotle's antimony, that knowledge is concerned with the universal, while reality is individual, has never been fully resolved. The inner reality of things is not grasped by abstraction. Rather it is action, living with the real, which brings us to things. Blondel would feel that Pascal's famous advice to take holy water, have Masses said, and you will believe: *"Cela vous fera croire et vous abêtira,"* is not far from the truth.[8] Finally, Henri Bergson criticizes the conceptual as an inadequate expression of reality. It expresses a thing in terms of what it is not rather in terms of what it is. Intuition, on the contrary, enters into the reality of the object, is in sympathy with it, and expresses it from within rather than from without.

The second major doctrine in Newman's epistemology follows logically from the first. As there are two types of apprehension and judgment, the notional and the real, so there are two types of reasoning, explicit and implicit. Explicit reasoning finds its ablest expres-

[7] *op. cit.*, 88, 93; cf. Thomas J. Gerrard, "The 'Grammar of Assent' and the 'Sure Future,'" *The Dublin Review*, Fourth Series, No. 55, 1905.
[8] Pascal, *Pensées*, ed. Léon Brunchvicg, 440; cf. *ibid.*, 185 and *G. A.*, 34.

sion in the science of logic, so well analyzed by Aristotle, "the boldest, simplest and most comprehensive theory . . . framed on the principle that every act of reasoning is exercised on neither more nor less than three terms."[9] The syllogism is the perfect expression of explicit reasoning, and logic is the science which formulates its laws. Since this type of reasoning uses notional ideas, general universal terms which are applicable to all individuals in the class, it must suffer from the limitations inherent in notional apprehension. Logic does not reach to the ultimate particular thing. One cannot conclude facts. Likewise logic is unable to prove its first principles, for these are obtained only by the living, untrammeled activity of the mind. As a result science can reach certitude in the abstract, but only probability in the concrete. There are many unforeseen events which can interfere with the workings of universal laws. Again, many objects of high importance, such as motives, character, taste and religion, cannot be included in abstract reasoning.

> As I said when I began, thought is too keen and manifold, its sources are too remote and hidden, its path too personal, delicate and circuitous, its subject-matter too various and intricate, to admit of the trammels of any language, of whatever subtlety and of whatever compass.[10]

Because of this intimate connection with the notional, explicit reasoning makes a poor instrument for action and the problems of everyday life. Moreover, to a great extent the multitude of men are unable to achieve explicit formulations of their beliefs. If the necessity of formal proof be urged too rigorously, the mass of mankind will be condemned to scepticism.

> Logic makes but a sorry rhetoric with the multitude; first shoot around corners, and you may not despair of converting by a syllogism. Tell men to gain notions of a Creator from His works, and, if they were to set about it (which nobody does) they would be jaded and wearied by the labyrinth they were tracing. Their minds would be gorged and surfeited by the logical operation. Logicians are more set upon concluding rightly than upon right conclusions. . . . After all man is *not* a reasoning animal; he is a seeing, feeling, contemplating, acting animal.
>
> . . . this universal living scene of things is after as little a logical world as it is a poetical. . . .[11]

Newman feels that to confine the search for truth within the boundaries of explicit, formal reasoning is to condemn it to sterility. Too much which does not allow of logical expression enters into reasoning.

> Let every prompting of the intellect be ignored, every *momentum* of argument be disowned, which is unprovided with an equivalent wording, as its ticket for sharing in the search after truth. Let the authority of nature, common-sense, experience, genius, go for nothing. Ratiocination, thus restricted and put into grooves, is what I have called inference, and the science, which is its regulating principle, is Logic.[12]

[9] Newman, *Oxford University Sermons* (New York, 1898; first published 1843), 258.
[10] *G. A.*, 284; cf. *ibid.*, 90, 269, 278-279, 284; *U. S.*, 213.
[11] *op. cit.*, 94, 268.
[12] *op. cit.*, 263.

Newman insists that we take life as we find it. Experience shows that every man has certitudes which he cannot justify by formal dialectic. A doctor may be unable to give convincing reasons to support a correct diagnosis. A peasant, untrained and almost inarticulate, may succeed where instruments of science fail in predicting the weather. Conclusions depending upon observed facts, motives, character and upon the subtler exercises of the spirit, are of everyday occurrence. "Men argue badly, but they reason well, that is, their professed grounds are no sufficient measure of their real ones."[13] "In other words, all men have a reason, not all men can give a reason."[14] "Clearness in argument is not indispensable to reasoning well."[15] Analysis of the reasoning process is a separate and distinct action, and success or failure of this analysis does not affect the value of the original action. Small men quibble over reasons, while genius attains truth. A perfectly correct position may be incapable of being sustained in formal argument.

This type of reasoning is closely connected with the life and action, the province of the real idea. The whole man, his hopes and fears, all the experiences of his past, participate in such decisions. Thus it happens that moral dispositions have a considerable influence on belief. Newman speaks of "easiness of belief" and "hardness of belief." The man with right disposition accepts the truth upon slender evidence, while the man of poor disposition prefers to dwell upon the objections to an unwelcome truth.[16]

The basis of this process is the complexity of the real and consequently of truth. Simplification, if carried too far, becomes falsehood.

> Truth is vast and far-reaching, viewed as a system; and, viewed in its separate doctrines, it depends on the combination of a number of various, delicate, and scattered evidences; hence it can scarcely be exhibited in a given number of sentences.[17]

Since objective reality is so complex, truth is to be sought after rather than received passively. The mind must work to attain it rather than hope to receive it as a legacy. Each fact, each separate conclusion, though a probability in itself, must be carefully scrutinized to see if it will aid the mind in its quest for certitude. Truth is woven of many strands. Frail by themselves, together they have the strength of knotted steel.

> . . . the conclusion in a real or concrete question is foreseen and predicted rather than actually attained; foreseen in the number and direction of accumulated premises, which all converge to it, and as the result of their combination, approach it more nearly than any assignable difference, yet do not touch it logically (though only not touching it) on account of the nature of its subject-matter, and the delicate and implicit character of at least part of the reasonings on which it depends. It is by the strength, variety or multiplicity of premises, which are only probable, not by invincible syllogisms—by objections overcome, by adverse theories neutralized, by difficulties gradually clear-

[13] *U. S.*, 212.
[14] *op. cit.*, 259; cf. *ibid.*, 209-212, 84, 89.
[15] *op. cit.*, 90, cf. *ibid.*, 275
[16] Cf. *G. A.*, 330; *U. S.*, 187-190
[17] *U. S.*, 90; cf. *ibid.*, 275.

> ing up, by exceptions proving the rule, by unlooked-for correlations found with received truths, by suspense and delay in the process issuing in triumphant reactions—by all these ways, and many others, it is that the practised and experienced mind is able to make a sure divination that a conclusion is inevitable, of which his lines of reasoning do not actually put him in possession.[18]

Thus it is often the convergence of separate probabilities that leads the mind to truth. The only sufficient reason for this convergence is the objectivity of the truth towards which they converge.[19]

When the mind exercises itself in this process of implicit reasoning, Newman considers it as the "illative sense." This he defines as the living mind in its perfection, the healthy action of the mind. It is the ratiocinative faculty concerning itself with principles, facts, doctrines, experiences, testimonies. It implies the power of judging and correlating at the highest point in any given individual. This faculty, while one in nature with the logical faculty, represents the intellect in its untrammeled form, using its full virtuosity, exercising a power of penetration and insight too delicate and subtle for logical analysis. It ranges to and fro, its quickness has become a proverb, its subtlety baffles investigation. Its progress is like that of a ship tacking in the wind, a climber on a steep cliff. Probabilities, associations, laws, instincts, memories, impressions, are all used in attaining the goal. This is the way men ordinarily reason, "not by rule, but by an inward faculty. Reasoning then or the exercise of reason, is a living spontaneous energy within us, not an art."[20]

The illative sense supplies for the deficiencies of logic. At the beginning of the reasoning process it reaches to first principles. It sees at a glance the ultimate laws that must govern any given inference. While it may not be able to justify these principles by formal reasoning, it is none the less assured that it has attained to truth. It is active, secondly, in the middle of the chain of reasoning, gathering, sifting, comparing, correlating the various probabilities which converge to certainty. Then in conclusion, it does what no formal inference can do, it reaches to the concrete object. Logic cannot reason to facts, but the mind can from its perceptions, experiences, and comparisons, anchor a chain of reasoning to the rock of fact. We can judge that John Smith is not trustworthy, we cannot conclude it from principles.[21]

Such a power varies with individuals. It may be natural, as when men speak of "gifts" for judging character or for sizing up difficult situations. It may be acquired from experience. An experienced physician, teacher, or scientist, can form conclusions on premises which would mean but little to the neophyte. Thus the illative sense is highly personal; it is no measure between mind and mind. It may

[18] *G. A.*, 321.

[19] Cf. Pinard de la Boullaye, *L'Étude comparée des Religions* (éd 5, rev., Paris, 1929), II, 518-520, 525, 528, 552.

[20] *U. S.*, 257; cf. *ibid.*, 267; *G. A.*, 360-362, 317, 353; Ward, *The Life of John Henry Cardinal Newman* (London, 1912), II, 258; *Last Lectures* (London, 1918), 99; *Men and Matters* (London, 1914), 278; Maher, *op cit.*, 332.

[21] *G. A.*, 360-362.

vary from the intuitions of genius to the judgments, biased by prejudice and self-interest, of the ignorant man. The same man may have competence in one field and not in another. But the existence of this power can hardly be denied by an observant philosopher.[22]

Newman, accordingly, speaks of a type of reasoning which cannot be confined within the strict limits of logic. It does not conflict with logic; it transcends it. Implicit reasoning might be styled personal rather than philosophical, the reasoning of every day life. The most important decisions are made as a result of its conclusions. It is a necessity for a life of action. This would be a cold and hungry world were man under the logical necessity of giving formal proof for every conviction. The mind cannot appeal to any faculty outside of itself. Its own normal working is its ultimate justification. While it has a duty to make such certitudes available to others, to universalize its convictions, this is a distinct and separate process.

Bergson seems to have analyzed the knowing process in a manner not unlike Newman's. He distinguishes between intuition and analysis.

> It follows from this that an absolute can be apprehended only in an *intuition*, while all else derives from an *analysis*. Here we define intuition as the *sympathy* by which a person transports himself into the interior of an object to coincide with what is peculiar to it and so, inexpressible. Analysis, to the contrary, is the process which traces an object to elements already known, that is to say, common to that object and to others. To analyze an object is to express it in terms of something other than itself.[23]

Intuition grasps the essence of an object, while analytical thought breaks down this essence into concepts suitable for the needs of daily life.

Le Roy expresses the same idea in different terms, distinguishing between static and dynamic schemata of thought. Intuition is the living act of creative thought, which pre-exists its expression in words. Beethoven, who feels an entire symphony in one flash of inspired ecstasy, is exercising this faculty. The artist who first feels the idea, then gropes for a medium by which to convey it, be it words, music, marble or canvas, exemplifies the relation between intuition and analysis. Likewise, discoveries in any field of learning are transitions from the merely notional to the real, and the faculty which effects such a transition is intuition. Le Roy insists that intuition is thought.

> *Intuition is thought.* Intuition is not truly opposed to intelligence, especially when that word is used in its wide sense. It is opposed only to discursive reasoning, as thought which is

[22] Cf. *op. cit.*, 360-362, 331.

[23] Bergson, "Introduction à la Métaphysique," *La Pensée et le Mouvant* (Paris, 1934), 205. "It suit de là qu'un absolu ne saurait etre donné que dans une *intuition*, tandis que tout le reste relève de *l'analyse*. Nous appelons ici intuition la *sympathie* par laquelle on se transporte à l'intérieur d'un object pour coincider avec ce qu'il a d'unique et par conséquent d'inexprimable. Au contraire, l'analyse est l'operation qui ramène l'objet à des élèments déjà connus, c'est à dire communs à cet object et à d'autres. Analyser consiste donc à exprimer une chose en fonction de cet qui n'est pas elle."

intensive to that which is extensive. It is the thought which apprehends in contrast to the thought which separates.[24]

Since the present paper seeks to present a problem rather than to attempt its solution, no further comparison of Newman and Bergson shall be attempted. The following quotation from a previous study of the subject, however, may serve to stimulate discussion:

> Both "intuition" and the "illative sense" are intellectual faculties. Their proponents insist upon this fact, and seem to prove their case. The verification of intuition by appeal to reality, the laborious preparation, the careful distinction between discursive and immediate knowledge all point to an intellectualist philosophy quite distinct from the pragmatism of James, the fideism of Balfour, the traditionalism of Lammenais. With these qualifications, then, it would seem that "intuition" and the "illative sense" are identical psychological faculties. They are both manifestations of the "living mind" attaining realities which can be expressed only partially by discursive, conceptual analysis. This does not mean that their philosophies are identical. Far less is it a chauvinistic claim that Newman anticipated Bergson, as he did the pragmatists. Rather, each has his own field of excellence. Bergson, whether he is right or wrong, has erected a metaphysic which in its depth, in the subtlety of its conceptions, in the brilliance of its analyses, in the universality of its ramifications, far surpasses anything Newman has done in philosophy. On the other hand, in his chosen field, Newman has shown an insight into the workings of the human heart, a deftness in treading the treacherous borderline where faith and reason meet, a courageous and penetrating analysis of the actual process of knowing, straying neither to the extreme of rationalism nor fideism, which must compel admiration and respect from the great French philosopher.[25]

In the discussion which is to follow, we might note the following six questions, and any others which may have occurred to the listeneners as the paper was read:

1. Was Newman correct in assuming the existence of a "real idea," at once distinct from the percept and the concept as ordinarily known?
2. Is his evaluation of the "real idea" acceptable?
3. Could we assert that Newman anticipated much that is true in pragmatism and Bergsonism?
4. Does the process of "implicit reasoning" exist?
5. Does Newman err in asserting its superiority to "explicit reasoning?"
6. Did he anticipate Bergson's "intuition" by his "illative sense?"

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[24] LeRoy, *La Pensée Intuitive* (Paris, 1929), 183-184. *"Or l'intuition est pensée.* L'intuition ne s'oppose donc pas vraiment à l'intelligence, quand du moins on donne à ce dernier mot son sens large: elle ne s'oppose qu'au discours, comme la pensée qui se concentre à la pensée qui se détend. Elle est la pensée qui se donne, en contrast avec la pensée qui se sépare."

[25] Cronin, *Cardinal Newman, His Theory of Knowledge* (Washington, 1935), 134-135.

SUMMARY OF DISCUSSION IN DIVISION C

Father Cyprian Emanuel, O. F. M., called the meeting to order. In brief but pointed fashion he indicated the importance of epistemology, and its bearing upon philosophical problems. From the time of the early Eleatics the reliability of man's knowing powers has been the object of earnest investigation. Particularly since the days of Descartes has this investigation been thorough and meticulous. To get at any contemporary problem it is essential that attention be first focused upon its epistemological basis. After the papers had been read the following discussions ensued.

The discussion upon Father Toohey's paper was rather brief; its reading had consumed the greater part of the alloted time. Father Toohey was called upon to explain certain terms that he had employed, *e. g.*, denotation and connotation. Father McLaughlin observed that the problem of representation with regard to knowledge is treated rather poorly in Scholastic text books. Terms are utilized in describing knowledge which convey a false impression. This is an example of the influence of the structure of language upon philosophical theory. Such words as "*similitudo*" and "*imago*" must be watched. The term representation is explained as if it meant a picture of reality in the knowing mind. If it is merely that we can scarcely get beyond our own minds; there is ourselves and our subjective representations. The word representation is really intended by St. Thomas to mean that something is literally re-*presented* to the mind. The object takes up, as it were, a new mode of being, a new mode of presence. And the mind becomes one with the object existing in this new mode. We cannot be too careful in our choice of terms which are to convey the meaning of our philosophical theories. Father Brickel observed that many difficulties are inherent in language itself, and that consequently many explanations are necessarily obscure and through no fault of the philosopher. Thus when mystics speak phantasms must be reconstructed and old ideas wiped out. Language is always at best an imperfect instrument.

Then followed the discussion of Father Cronin's paper as follows:

Father Brickel: I have been deeply interested in *The Grammar of Assent*, but I can hardly convince myself that Newman is a philosopher. Is his "real idea" an idea at all? To me he seems to designate by this term simply the emotional accompaniment of certain concrete images and perceptions. I feel that words are capable of expressing thought. Thus, for example, as a Jesuit I have studied the life of St. Ignatius more thoroughly than most priests, yet I feel that I could convey my knowledge not only to fellow priests, but even to unbelievers such as Lenin or Trotsky.

Father Cronin: Newman himself is responsible for the obscurity that surrounds the notion of the "real idea." He stressed the emotional accompaniment of the real idea because he felt that thought is relatively sterile unless it results in action. He likewise did not make the careful philosophical distinctions of the trained philosopher. In spite of such inexactitude, Newman seems to have penetrated to a

truth which, if accepted by Scholastic philosophy, will introduce a radically new solution to certain epistemological problems. He added to the percept and concept of traditional philosophy the real idea or intuition which, like the percept, is singular, personal and incommunicable, and yet which shares with the concept the dignity of intellectual thought. Newman writes of the school boy or the saint who first learn truths and then *realize* them. This second kind of knowledge is much deeper than the first. It implies a penetrating, trained intelligence. It is intellectual in quality. Yet at the same time it is singular and personal. It is a deeper knowledge of one thing, not a mere addition of attributes to a concept. To use your former example, Father Brickel, Newman would contend that you would be incapable of expressing in words your deep knowledge of the teachings of St. Ignatius, and even what you could express would be largely lost on Leon Trotsky. An illustration of this fact may be found in the recently published controversial correspondence of Arnold Lunn and J. S. Haldane. These distinguished gentlemen, deeply learned, found great difficulty in conveying to each other basic philosophical notions. In one instance Mr. Haldane insists upon publishing the exact text of St. Thomas to sustain an interpretation which he feels is the only possible one, and yet one which a Scholastic would instinctively reject. To Mr. Lunn St. Thomas' philosophy is real, to Mr. Haldane it is notional. In such a manner also the philosophy of the real idea explains the saint and the reformer who draw from familiar truths deep inspiration and insight.

Father Brickel: Even granted this, is Newman a philosopher? May we not judge the real interests of a thinker by the type of book which he produces? The great bulk of Newman's work is historical. His philosophy is contained in only one book, and a most obscure one at that. If he were a real philosopher he would have been more clear. Again, his philosophy may well be assayed by its results. You mention Bergson, the pragmatists and the modernists as being affected by his thought. Surely a philosophy leading to such systems could not be sound. The Church does not follow Augustine precisely because one interpretation of his teaching leads to Calvinism. I am not sure but that Newman's teaching was condemned in the syllabus of Pope Pius X, where the modernist doctrine that a congeries of probabilities can lead to certainty is rejected.

Father Cronin: I am glad that you mention Newman the historian. Too often this profound thinker is considered as a mere litterateur, a dabbler in words. Yet I believe that he is more than an historian, that he is a philosopher of deeply original thought. Before explaining this idea, however, I should like to discuss the other difficulties centering around Newman's alleged modernism and the obscurity of his thought. It hardly seems just to judge a thinker by those who profess interpretations of his teaching which he explicitly rejected. Judged by such a criterion even the Sacred Books would be found wanting. Moreover, we know on the highest authority that the Papal condemnation of modernism did not include Newman's teachings.

Pope Pius X insisted upon this fact when he wrote to Bishop O'Dwyer in 1907 approving his defense of the great Oratorian scholar.

Likewise, I do not feel that the obscurity of *The Grammar of Assent* is a reason to deprive Newman of the title of philosopher. Original thought is by its very nature obscure and difficult, for it forces men to consider new facts for which their minds are often unprepared, and to recast traditional teaching in the light of these facts. It is the very profundity of the insight of the mystic which prevents us from fully comprehending his message to us. I do believe, however, that much of the obscurity of *The Grammar* can be traced to Newman's fear of misunderstanding and to his attempt to reply to yet unvoiced criticism. In spite of the problems occasioned by this procedure vital truths are to be found in these pages. It seems likely that Scholastic epistemology would profit by the effect to sift that which endures in his thought from that which is temporary.

Newman considered his philosophical work among the most important tasks of his lifetime. He told Aubrey de Vere that the problem of *The Grammar* had been foremost in his mind for "these twenty or thirty years." On the very day he received the Cardinal's hat, Newman interpreted this act as a seal of approval placed upon the philosophical doctrines which he considered his greatest contribution to his generation. From 1826, when he preached the first of the great *Oxford University Sermons*, until he replied to Principal Fairbairn in 1885, Newman was concerned with the philosophy of knowledge and belief. Reflections on these problems appear frequently in his sermons. Furthermore, we have information concerning several philosophical memoirs, as yet unpublished, which deal with more strictly philosophical problems than those treated in his published works. Excerpts from a diary (writen about 1860), published by Father Przywara in the *Stimmen der Zeit* of 1927, show that Newman had deep insight into the difficulties of metaphysical thought. With these facts in mind, I do not believe that we exaggerate in calling Newman a philosopher.

Father Kaiser: Did Newman change his philosophy when he became a Catholic? In reading the *Apologia* I find the section which deals with his Catholic life easy to understand, whereas the earlier sections are obscure and difficult. Does not the same condition obtain as regards his philosophy?

Father Cronin: I believe that the difficulties in the *Apologia* derive from the circumstances of its composition. Newman wrote this work in great haste. The only changes in later editions were omissions, for the sake of charity, however, not clarity. We have no evidence that Newman's philosophical opinions changed with the years. On the contrary, I believe that his earliest philosophical work is his best. *The Oxford University Sermons* form a clear, unified whole, whereas *The Grammar of Assent*, while profound in its teaching, is labored and difficult to a high degree. It is significant that Newman used the earlier work in his reply to Principal Fairbairn in 1885. We might also note that Newman, unlike Augustine, published no *Retrac-*

tiones. The only changes Newman made as a Catholic in *The Oxford University Sermons* are contained in a Preface and a few notes reaffirming and clarifying his former stand.

Father Brickel: There is still one difficulty which puzzles me deeply. Did not Newman make the criterion of truth subjective? He asserted that the illative sense is its own ultimate justification. This appears to be Cartesianism.

Father Cronin: Newman's thought here has to be interpreted by other passages in his works. In treating of real assent, for example, he insists that one of its characteristics is that it represents an *object*, and that its very perfection lies in its correspondence to that object, while notional assent, on the contrary, is more concerned with the relations between ideas and with consistency in reasoning. In another passage Newman insists that there is no interior criterion of certitude. Likewise he asserts that the distinctness and clearness of the image perceived by the mind is no warrant for assent. Again, the painstaking task of the *Apologia* shows a thinker who is quite concerned with objective truth. In the passage referred to the word *ultimate* must be stressed. While the proximate criterion of truth is evidence, its ultimate sanction must be the ability of the mind to know. This ability is one of the fundamental postulates of Balmès, and the necessity of proving the existence of such a power has given us one of the basic problems of epistemology. Far from being a Cartesian, Newman asserted that he would choose naïve dogmatism, believing everything, "confident of the power of the mind to slough off error," rather than embrace Descartes' supposed universal doubt.

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DIVISION D: Aesthetics. *Leaders*, MORTIMER J. ADLER AND GERALD B. PHELAN.

Problems: *(a)* Creation and Imitation: An Analysis of *Poiesis*.[1] *(b)* Beauty in Nature and in Art.

PART I—*Creation and Imitation.*

I. INTRODUCTION.

1. Man's dignity among creatures resides in his character as a knower (understanding), as an agent (freedom), as a maker (artistic imitation).
   a. Other animals know but only man understands, other animals act but only man acts freely, other animals produce things but only man makes imitatively (artistically).

[1] The outline which follows is, for the most part, the paper as read. For the sake of brevity, certain of the parentheses were omitted in the reading; for the sake of clarity, minor verbal changes have been made. The discussion which followed the reading discovered a fundamental error in the analysis and, for the sake of truth, footnotes have been added to take account of the consequences of the correction of this error.

b. Imitation, freedom and understanding are peculiar properties of man, flowing from his nature as a rational animal.

2. All creatures are *in some sense* made in the image and likeness of their Creator, each with respect to its peculiar dignity in the order of things. (For the distinction between image, generic likeness and trace, see St. Thomas Aquinas, *Summa Theologica*, Q. 93, A. 2, A. 6, A. 9; Q. 4, A. 3.) Thus, man is understood as participating in divinity when he is viewed as a knower, a free agent, and as an artist (an imitative maker).
3. In each of these respects, there is an analogy between God and man. The development of this analogy in its positive and negative poles is a way of understanding man and locating the mysteries of human nature, as well as of understanding God and locating the mysteries of the Divine Nature.
4. We shall here consider only *poiesis* or human making. The analysis of *poiesis* will be made in terms of the analogy between creation (Divine making) and artistic production (human making).
   a. This suggests at once that art is imitation in the sense that man as maker imitates God as Creator. (Maritain, *Art and Scholasticism*, pp. 123-124.)
   b. But there is also a sense in which art imitates nature.
      (1) First, in that making as a process is an imitation of natural process; (cf. Maritain, Note 128)
      (2) And second, in that the thing artificially made is an imitation of a natural thing (or, more generally, a creature of God.)
   c. Imitation is thus considered in three ways: (1) with respect to the agent of making, (2) with respect to the process of making, and (3) with respect to the thing made. (It is only in the last respect that we traditionally speak of the object of imitation.)
   d. It is necessary, therefore, to complicate the analogy by constructing it with three terms. Thus, with respect to *work* or *operation*

      God : nature : man :: creation : change : making.

      This proportion must not be taken too simply, because
      (1) Man is a part of nature and both are the Divine creation and under Divine Providence;
      (2) And yet man, as an image of the Creator, can be distinguished from the rest of nature.
      (3) We must, therefore, develop two partial proportions separately: (a) the analogy of man and God, and (b) the analogy of man and nature; and in each case we must consider the three references of imitation.
      (4) This double analogy will inevitably lead us to an understanding of man as a natural animal and man as a spiritual person.
5. It will be convenient to present this analysis of *poiesis* in three dimensions and in the following order:

a. The physical: making as a *process*
b. The metaphysical: the being of the *thing made*
c. The psychological: man as *maker*, and his *power* of making.

II. PHYSICS: MAKING AS A PROCESS.

1. Creation (Divine making) is not change. (St. Thomas Aquinas, *Summa Theologica*, Q. 45, A. 2, ad. 2; Q. 46, A. 3, ad. 2.)
   a. Creation is *ex nihilo;* it is a coming to be from absolute non-being; whereas in change, the process of becoming is from one being to another. (*Sum. Th.*, Q. 45, A. 1; *Sum. Con. Gen.*, II, 26, 27.)
   b. Creation is not measured by time. According to St. Augustine, the six days are as one; the order is intellectual not temporal. (*Sum. Th.*, Q. 74, A. 2.) But change is measured by time. (*Sum. Con. Gen.*, II, 29.)
   c. The principles of change are matter or substratum and the contraries (form and privation), but neither form nor matter, not even prime matter, is prior to creation, except in God. (*Sum. Th.*, Q. 45, A. 4; Q. 47, A. 1; Q. 117, A. 3.)
   d. Creation is the coming to be neither of matter nor of form, but of self-subsisting things. Prime matter and its forms are concreated. (*Sum. Th.*, Q. 45, A. 4.) But in change or motion there is always prejacent matter.
   e. Change is a universal of which there are many instances; the causes of change are analytically separable. But creation is a unique event; its only principle and cause is God, and it is, therefore, mysterious and unanalyzable. (*Sum. Th.*, Q. 44, A. 3.)
   f. Creation is, therefore, properly spoken of as a *making* rather than as a *change*. (This raises the problem: Is *human making* properly spoken of as a change or as a creation, in some sense?)
2. Change is first divisible into substantial and accidental.
   a. Substantial change is generation or the coming to be of a self-subsisting thing; whereas accidental change is a thing's coming to be such and such. (Accidental change is divisible into the three motions: alteration or change of quality, increase and decrease, or change of quantity, local motion or change of place. Aristotle, *Physics*, I, 7; V. 1. Cf. *De Generatione et Corruptione*, Bk. I, Ch. 3 at 319b 12.)
   b. But, according to the *Categories*, only substances can change. Generation is not a change of substance, but the coming to be of a new substance. A substance as a self-subsisting thing can only change accidentally. It is the subject of change only as the subject of motion. (The three kinds of motion or accidental change are spoken of as qualified coming to be, whereas generation or substantial change is unqualified coming to be and is not spoken of as a motion. Cf. Aristotle, *Metaphysics*, 1068a 10.)
   c. It is difficult to locate the subject of generation or corruption, since the individual substance is not the subject of its own com-

ing to be or passing away in the same sense that, while it subsists, it is the subject of motion or accidental change.

(1) For this reason, *the* substratum rather than *a* substance is more properly said to be the subject of generation and corruption, whereas a substance is the subject of motion or accidental change.[2]

(2) Furthermore, the account given by the Philosopher of generation and corruption is analytically inadequate. The attempt to reduce all change to motion, and to local motion, is in one sense the proper aim of the science of physics, seeking intelligibility; but in another sense, it violates the essential distinction between generation and the motions.

(3) Generation is ultimately unanalyzable. Aristotle did not fully recognize the mystery of generation because, unaided by Divine theology, he did not see that generation is propagation, the work of nature which continues the work of Creation, the multiplication of individuals in their kinds. (*Sum. Th.*, Q. 45, A. 8.)

(a) As divided according to human understanding, God's work is primarily the work of creation, the work of the six days, and secondarily the work of created nature, the work of propagation of individuals in species. "In the six days God created all things in their origins and first causes and from this work he subsequently rested. Yet afterwards by governing his creatures in the work of propagation, He worketh until now." (*Sum. Th.*, Q. 69, A. 2; cf. Q. 73, A. 3.)

(b) A father is only the incidental efficient cause of his progeny. God is always the essential or principal efficient cause of any generation. (*Sum. Th.*, Q. 46, A. 2, ad. 7.) In other words, nature propagates only through the causes infused in it by God through the work of creation.

d. We shall, henceforth, preserve this distinction by using the word "propagation" for the coming to be of an individual thing (a first substance) and the word "change," as a synonym for "motion," to designate the natural process in which an enduring substance is the subject of accidental modification. As God's work includes propagation secondarily, so the work of nature, while primarily propagation, includes change or motion secondarily. Both propagation and change are contingent, and both fall within the Divine Providence. (Where before it was

[2] The substratum is prime matter. (Vd. Aristotle, *De. Gen. et Cor.* 319b 8-24.) It is difficult to understand the sense in which prime matter is the subject of generation and corruption, since to be a subject is to be actual to some degree whereas prime matter is purely potential, different from non-being only in that it is potential being. How, then, can it be said unequivocally of generation and motion as kinds of change that "there is no change without a subject which is changed, and which must be some particular thing before the change is effected—in other words, being is prior to change." Maritain, *Introduction to Philosophy*, Ch. VII, p. 240.

said that creation is not change, here it must be said that creation is neither propagation nor change, in the sense of motion.)

e. Three traits of propagation must be noted as we proceed:
   (1) The contingency of propagation follows from the separation of essence and existence in all created things. Existence can be viewed as the first and radical accident of any existing thing, and propagation is the occurrence of this accident.
   (2) Propagation is always of the like by the like; *i. e.*, only substances in the same species are related as propagator and propagated.[3]
   (3) The matter of the propagated thing is somehow a part of its propagator, just as the propagator and the propagated participate in the same specific form.[4]

3. Change is also divisible into natural and artificial.
   a. This distinction can be made in two ways:
      (1) In artificial change man is the intelligent efficient cause, and his art is the formal cause of the change.
      (2) There is no principle of change in the artificial thing. (*Physics*, Bk. II, Ch. 1; *Metaphysics*, Bk. XII, Ch. 3.)
   b. But this second point raises a difficulty: If there are *artificial things* (substance *or* individuals), it would seem to follow that there must be *artificial propagation*, as well as artificial change in the restricted sense of the three accidental motions.
   c. This formulates our crucial physical question: Is the process of human making a process of propagation or a process of change (motion), or is it, like Divine making, neither propagation nor change? Let us explore the alternatives dialectically:
      (1) It seems that making is not propagation because
         (a) The maker and the thing made are never in the same species;
         (b) Propagation does not involve knowledge of the thing to be generated, whereas making is conceptual (by idea) and does involve foreknowledge of the thing to made.
         (c) The distinction between art and procreation must not be violated. Man propagates as an animal, but makes as a rational or intelligent being. ("Our works of art are very far from being truly described as our children. They are inanimate things, they do not proceed from us *in similitudinem naturæ*, they are the product of an artificial manufacture, not of a natural generation." Maritain, p. 126.)

[3] What *appears* to be generation in the sphere of the inanimate, wine becoming vinegar, water becoming ice, is thus not propagation; it is ultimately reducible to local motion as what is truly generation (propagation) is not. In its various uses, the word "generation" is not strictly univocal. Cf. *Sum. Th.*, Q. 118, A. 1, A. 2. Also *Con. Gen.*, II. 102.

[4] Is the matter of the propagated thing prejacent or prime? Since the work of creation and of propagation are distinct, the role of prime matter must be different in relation to these works. To the extent that the matter of the propagated thing preexists in the propagator, it is prejacent; as it exists in the propagated thing, it is prime; it is clearly not the same as the prime matter of creation.

(d) In generation, the composite produces the composite; it is not produced by form acting on matter. (*Sum. Th.*, Q. 65, A. 4.) But in human making, the production is by an imposition of form on prejacent (not prime) matter.

(e) It seems to follow, therefore, that if making is a natural process it must be a change or motion, since it is not propagation. In which case, man makes by operating upon existing substances and changing their accidents in various respects. The only differentium of making as artificial change is human intelligence as an efficient and formal cause. (Man is a voluntary agent in making and acts not only by his own specific form but by the forms he possesses intellectually. Cf. *Sum. Th.*, Q. 47, A. 1, ad. 1.) But this difference does not distinguish *making* from other voluntary action which is not *productive*.

(2) But it also seems that making is not change or motion because

(a) The products of making *seem* to be *substances* (self-subsisting things) or at least *individuals*, rather than merely accidental modifications.

(b) The operations of productive art are properly said to be impressing form on matter. (*Sum. Th.*, Q. 74, A. 3, ad. 1; also Maritain, p. 9.) This operation is, therefore, more like propagation or generation than like change or motion.[5]

Digression: It is necessary here to distinguish the productive from the practical arts.[6]

(1) The practical arts, such as navigation, medicine, teaching are human operations resulting in accidental modifications: of the place of a ship, of the health of an animal, of the knowledge of a soul. (Navigation can be further distinguished from such arts as medicine and teaching which *only coöperate* with nature to produce the modification desired. Maritain, pp. 18-19 and 45.)

[5] Viewed as impressing form on matter, human production is even more like creation than like propagation. But the matter is, of course, prejacent rather than prime; and if prejacent, it must pre-exist production and hence it is not matter but a substance out of which man makes.

[6] If the end of production is only the accidental modification of a pre-existing substance, then the distinction which follows in the text fails. There is no difference between "making" a man healthy and "making" wood into a house except possibly (1) the category in which the accidental form occurs (health in quality, house in disposition) or (2) that the substance of the former is organic and of the latter inorganic. But the substance whose place is modified by navigation is also inorganic, and the art of the drill-major may "make" a man change his posture. These, then, cannot provide distinctions between doing and making. This dilemma seems to follow, therefore: either the work done in production is not merely an accidental modification of a substance, or there is no distinction between what is called *production* and other *practical* activities of an extrinsic sort, in which man is an agent acting on something external to himself and changing it. The second alternative is contrary to common sense and to Aristotle's position in the *Ethics*, VI, 4: "Action is not production and production is not action."

(2) The productive arts, such as carpentry, sculpture, music and logic are human operations resulting in an individual thing: a table, a statue, a sonata, a proposition.

(3) This is the distinction between *praxis* and *poiesis* (doing and making) viewed as extrinsic operations (exterior acts of the soul.)

(4) Both *praxis* and *poiesis* as powers can be the subject of the virtue of art (fixed means of operation), but we shall here consider human art only in relation to *poiesis*. There is no difficulty about the practical arts: their operations, viewed physically, are instances of change or motion.

4. The problem of artistic production can be summarized in terms of competing analogies.

a. Man's work is both like God's work and like the work of nature. It is somehow an imitation of both. (For the analogy of creation, procreation and artistic production, see *Sum. Th.*, Q. 15, A. 1, A. 2; *Con. Gen.* II, 24, 100.)

(1) It is like creation in that man is the external, intelligent efficient cause of the thing made and the thing made is an individual thing. (In creation, God the efficient cause, is external to his effects; so in art, man as the productive agent is external to his productions; whereas in nature, the four causes of any change are internal to that change.)

(2) Making is more like creation than propagation in that the thing made always resembles the individual maker essentially, whereas progeny resemble the individual propagator (their proximate source) only accidentally. (The artist is sure to put himself into his work, is sure to stamp it with his own likeness, whereas in the case of a child, because of matter and heredity, it is not certainly the father or the mother, but any more or less desirable ancestor who can come to life again and show his likeness. . . . There is in the child a fearful element of the unknown which is absent from the work of art. Maritain, p. 127.) As God makes things in his own image and likeness, so does an individual man make; but he propagates only in the likeness of his species.

(3) But only God creates (*Sum. Th.*, Q. 45, A. 5; Q. 65, A. 3), and man's work is at best only an imitation of Divine creativity, defective in that

(a) Man's intellect and will are not one. (*Sum. Th.*, Q. 19, A. 4, ad. 4);

(b) God's knowledge and creation are the same; His ideas are at once Exemplars and Types. (*Sum. Th.*, Q. 14, A. 8; Q. 15, A. 3.) But in man there is a diremption of knowing and making. Man knows by abstracting and his knowledge, thus derived from things, is prior

to the conceptions which direct his making. (Cf. Maritain, pp. 88-89. "The operative idea is thwarted in our case by our condition—minds created in a body, placed in the world after creation, and compelled to draw first from created things the forms they use; in God alone does it appear perfectly.")

(c) Man's making is not *ex nihilo.* Only an infinite power can make *ex nihilo.* (*Sum. Con. Gen.*, II, 20, 21.)

(4) This last point, negative in the analogy of making and creation, becomes positive when we consider making and the work of nature. Making is like the work of nature in that it operates to bring being out of being. But in this analogy making is both like propagation (in that it produces substances or at least individuals) and like change or motion (in that it operates on substances).

(5) It seems to follow, therefore, that while making is *like* creation, *like* propagation, and *like* change, it is *strictly none of them.*

b. But creation, propagation and change seem to be exhaustive of becoming. What, then, is making? In terms of physics, it is most like *change* or *motion.*

(1) The difficulties in the way of treating making either as creation or as propagation are *insuperable.*

(2) There is only *one* difficulty in the way of treating making as a process of change (art as the principle of motion by which man modifies the accidents of things). That difficulty is the *supposition* that making is *productive, i. e.*, that the product of making is a thing somehow, a substance *or* an individual.

c. We must, therefore, test this supposition and complete our physical analysis by turning at once to a metaphysical account of the thing made.

III. Metaphysics: The Nature of the Thing Made.

1. It is necessary first to distinguish useful things from all other products of human art.

a. Utility is of two sorts: (1) that is said to be useful which can serve as a means to an end; thus, knowledge and health are useful; (2) that is said to be useful which is *operable;* the operable is the movable, that which is subject to change; thus, physical things (corporeal substances) are useful.

b. That which is useful in the second sense is always useful in the first sense also, but not conversely.

c. Such works of human art as brass, steel, shoes, ships, etc., are useful both as means and as operable. Their definitions involve their utility as means to some end, and these utilities require them to be operable, hence to be made of physical matter.

d. It would seem to follow, therefore, that if man makes such use-

ful things, he makes first substances, compositions of matter and form which are self-subsisting and capable of change.[7]

(1) The form of such things is specific; their individuation results from the signate matter employed.[8] (The form of the house in the architect's mind *is* the species of the house which exists in matter. *Sum. Con. Gen.* III, 49. The knowledge of the human artificer is not productive of the whole thing, but only of the form. *Sum. Th.*, Q. 14, A. 11; *Sum. Con. Gen.* II, 20).

(2) The matter employed is not prime matter but formed matter, its kind being selected according to the utility involved in the form or definition of the thing to be made.[9]

e. Such artificial substances imitate natural substances.[10] The

[7] *This is error.* It does not follow from the formula which is regarded as the definition of a useful thing that it must be a first substance. On the contrary, the immediately subsequent points in the text contradict the position that "this chair" or "this ship" or "this shoe" is a substance (*ens per se, unum per se.*) A substantial unity is a composition of prime matter and a substantial form, its first act; an accidental unity is either a collection or association of substances, or a composition of formed matter (substantial matter, second matter) with a further form which must therefore be an accidental perfection of the thing. Otherwise there would be a plurality of substantial forms. (Aquinas, *De Ente et Essentia*, Ch. VI. Pegis, *St. Thomas and the Problem of the Soul*, 173-175; cf. Aristotle, *Metaphysics*, Bk. IX, 7, also 1014b 26-35, 1045b 15. Also, *Sum. Th.*, Q. 76, A. 4; Q. 77, A. 6; Q. 66, A. 1, 2; and *Con. Gen.* II, 40, 54, 58, 72; IV. 81.) In other words, all artificial forms, all forms which man as an artificer imposes on "matter" must be accidental forms because the matter is not prime but prejacent. The being and unity of any artificial thing is therefore *ens per accidens, unum per accidens.* As St. Thomas says, the artificial thing can be considered as a particular substance only because of its matter, whereas the natural thing is in the genus of substance because of its form. Thus, "a statue may be considered in two ways, either as a particular substance or as something artificial." (*Sum. Th.*, III, Sup., Q. 79, A. 1, ad. 4; A. 2; ad. 4.) Can the same thing be said of a shoe or a ship?

[8] The determination of a specific accident as singular is due to the matter as in the case of the individuation of specific substantial forms. But there is this difference. Since the matter which individuates the accidental specific form "chairness" is prejacent, since it exists and must therefore be determined in quantity as well as substantially, it can function as signate matter. But the matter which individuates a substantial form must be prime; being totally devoid of form it cannot exist and can have no determinations. To be signate, matter must at least have quantitative determination, but this cannot precede substantial determination. If quantitative determination flows from the first substantial form, then the principle of individuation is in the form itself and is not from the matter; if from the matter as signate, the matter is not prime. (Cf. *Sum. Con. Gen.* II, 40.) The mystery of individuation may be part of the larger mystery of creation and propagation: our understanding of individuation seems to be analogical, in terms, for example, of how chairness becomes this chair through its signate matter, the wood of which it is made. But the wood is strictly not matter but a substance. The analogy of artificial things is, therefore, remote from natural individuation. That it is so frequently used indicates the remoteness of our understanding of the union of prime matter and substantial form.

[9] Since an artificial thing is not a substance, it is not definable in a strict sense. (Vd. *Metaphysics*, 1029b, 1031a.) The formula which is taken as a definition usually involves three terms: (1) the substance which as subject of the accident serves as matter, as nose in the case of snubness; (2) the accidental form, usually if not always in the category of posture (arrangement, disposition), cf. *Metaphysics*, 1022b. 1023a 35, 1043a 7; (3) the utility which follows from the accidental unity of (1) and (2), the patiency of the arranged substance or substances for use.

[10] Though useful works of art are strictly not substances, there are grounds for using the phrase "artificial substances." (1) To treat glass and bronze, shoes and ships, as substances conforms to common sense and common verbal usage (their substantive names). (2) Such also seems to be the intention of the Philosopher in many passages in which he writes *as if* bronze or "this house" were a substance; see particularly *Metaphysics* VII, Ch. 7, 8, 9; also 1043a 1-21, 30; 1070a 15. (3) Just as a natural substance is composed of distinguishable matter (man, of flesh, bones, blood), so many artificial things, such as a ship or a house, are composed of distinguishable substances (house, of bricks, wood, steel, etc.) This indicates a difference between "houseness" and "redness" as accidental forms, the former being received simultaneously in a number of substances as an organized collection and in no one of them separately, the latter in a single substance. (4) As Aristotle says, "matter is a relative term: to each form there corresponds a special matter" (*Physics* 194b8); substances, such as wood, can therefore be spoken of as the matter of artificial forms, as well as their subjects. (5) Such forms as glass, bronze, shoe, ship, like substantial

primary mark of artificiality and imitation in the useful thing which man makes is that it is like a first substance without coming to be like one. But other marks of imitation can be detected.

(1) Man's useful works are divisible into the inorganic substances he produces, such as brass and steel, and the organic substances he produces, such as shoes and ships. The differentium here is the homogeneity or heterogeneity of the proper parts.

(2) The inorganic substances man produces have the maximum similitude with natural inorganic substances in that their substantial form is actually inseparable from their proper matter. The only indication of artificiality here, beyond the manner of production, is that the matter of such substances is completely reducible to natural substances of the same grade of complexity.[11]

(3) The organic substances man produces are more obviously imitations of natural substances.

(a) They are dead or inert whereas all natural substances which are organic are alive. Naturally propagated organic substances not only grow but reproduce their kind; artificially produced organic substances neither

forms, have no opposites except the negative (non-glass, non-shoe, etc.). Thus, wood becomes black from being white, moves here from being there, but it becomes a chair from being not-chair. Further, its becoming a desk from being a chair is like the transformation of prime matter when an animal dies. (6) Artificial forms must be contingent rather than necessary accidents of the natural substances in which they are received; hence they perfect a potency of the matter of such substances, since all contingent accidents flow from the matter and not the form. But the matter of a substance is prime. In other words, the potency in prime matter for being wood is related to the potency in prime matter for being a house; though the first potency must be actualized before the second, the act of the second does not flow from the act of the first because then being a house would be a necessary accident of wood. Artificial forms, therefore, though not substantial because not the first act of prime matter, are quasi-substantial because they perfect potencies in prejacent matter which are like the potencies of prime matter. In perfecting such potencies, art completes nature. (Vd. *Physics* 199a8-19; *Metaphysics*, 1023a35.) Whenever the text refers to "artificial substances," the words must be understood as making this point of *quasi-substantiality*.

[11]The class of artificial inorganic substances raises a number of points. (1) If an artificial, inorganic substance, such as glass or bronze, can be reduced to the substantial components of which it is a mixture, so can natural inorganic compounds be reduced to their elemental components. If the elements exist, they must be substances, and hence any natural inorganic substance which is not elemental is strictly not a substance but an arrangement of substances. This difficulty is solved by the virtual retention of elemental forms in the mixed body; but the analysis should be the same for artificial as for natural mixed bodies. *Sum. Th.*, Q. 66, A. 2; *Con. Gen.*, III. 22. Cf. *Metaphysics*, 1017b 10. (2) If glass and bronze, let us say, are not substances because artificial, then a glass bowl or a bronze door is an accident of an accident. An accident can be viewed as in potentiality to further determinations, as the intellect, an accident of soul, is in potentiality to a particular act of thought. But the intellect is not actual *qua* accident except in particular acts of thought. Glass, however, as an accidental mixture of certain natural substances is actual without being a bowl. If its becoming a bowl is its reception of an accidental form, then an *actual* accident is in potentiality to a further accidental determination. But it is usually supposed that only a substance can be at once actual and in potentiality to accidents. *Sum. Th.*, Q. 77, A. 7, ad. 2. (It should be added that many artificial things, such as ships, machines, clothes, are made entirely of artificial materials.) But accidents are distinguished as inseparable from their subject or as supervening thereupon. St. Thomas speaks of the architect producing "through the form of the house all the accidents that originally accompany it; whereas those which are superadded to the house when completed, such as painting, or any other such thing, are produced through some other form." *Sum. Th.*, Q. 15, A. 3, ad. 4. This *seems* to argue that the form of a house, though artificial, is not itself accidental.

grow nor reproduce.[12] (This may explain what Aristotle means by saying that the artificial is distinguished from the natural by the lack of an intrinsic principle of motion. Also see A. E. Taylor, *Philosophical Studies*, pp. 417-418.)

(b) More significantly, their substantial form is not actually inseparable from their proper matter. Thus, the form of a ship appears in wood or steel; the form of a shoe in wood or leather; the form of a ring in wood, glass, iron, gold. But the specific form of a plant or animal is existentially inseparable from the proper matter of its species.[13]

(4) The class of useful works of art can, therefore, be defined as corporeal things (quasi-substantial), imitating material substances in the manner of their existence and in their utility, being operable by man as natural things are operable.[14]

f. Although artificial substances lack the power of reproduction, there is an analogy between natural propagation and artificial manufacturing. (We should speak, more properly, of machinofacturing—the multiplication of individuals in a kind by means of dies and productive machinery.)

(1) This can be stated in the proportion: As, in God's operation, the work of creation is to the work of propagation, so, in man's operation, the work of making the exemplar of a useful thing is to the multiplication of them by the mechanical arts (either called manufacturing or machinofacturing).

(2) The work of the six days is the creation of all things in their species; the subsequent work of nature is the propagation of individuals in species. In man's making we can similarly distinguish the conception or production of the

[12]Is it significant that man produces *only* out of inanimate, inorganic substances, and that such substances are, strictly speaking, not themselves generative. Cf. Note 3. Does this mean that the prime matter of inorganic substances has residual potencies which are not perfected by their natural substantial forms and which, therefore, man can perfect and by art thus complete nature. (Cf. *Physics* 199a8-19.) The substantial forms of animate, organic substances, on the other hand, completely perfect their prime matter. Although living substances can be accidentally changed by man, he cannot make anything out of them, except in the sense in which works of fine art are made out of accidents of the soul.

[13]This point is to be understood in terms of the analysis in Note 10. In the case of genuine substances, only the total nature is predicable of the composite, neither the matter nor the form. But in the case of works of useful art it is otherwise. Of this thing it can be said that it is wooden and a chair. We do not speak of the substance of which the chair is made as wooden but as wood. Cf. *Metaphysics* 1043a30. On the other hand, we do not speak of this thing as wooden and red but as wood and red. Chair is, therefore, not the same kind of accidental form as red. (It may also be significant that we speak of the *matter* and *form* of wood, but we speak of the wood as the *material* upon which the form "chair" is imposed. The word "material" here instead of "matter" indicates the quasi-substantiality of "chair"; that is, "material" means "*like* matter." The materials of art may, as we have seen, either be natural or artificial, as wood or steel.

[14]The operability of a ship is not reducible to the operability of its constituent substances taken separately; what is used is not the steel, the glass, the wood, etc., but the ship. Thus, it may be thought that the chair is operable because the wood of which it is made is operable, because the chair has a nature (the wood) which is mutable. (Cf. *Physics* 194a 22- 194b8.) But the operability of wood is not the same as the operability of the wooden chair.

exemplar or model of a useful thing and the multiplication of individual instances of the kind by an artificial process of reproduction.

(3) This adds a new distinction between human and animal making. Birds, making nests by instinct rather than art, are not able to manufacture them.

(4) As imitative of the process of nature (propagation), machinofacturing has greater similitude than the manual production of the single thing.

(5) The individuation of useful things made by man is through the accidents of their signate matter. But man sometimes seems to make the individual thing *qua* individual, as in the case of the building of a ship. Here man seems to make a unique entity, deserving a proper name, but even here, as always, there can be multiplication by manufacture. (Further, man is never the cause of the individuality of the useful things he produces.)

2. We must next distinguish man's servile or manual productions from his work which is called *free* because it is not a making in physical matter.

a. All works which are useful in the sense of operable must also be servile because to be operable they must be made of physical matter.

b. But not all works which are made in a manual or servile fashion are useful in this sense. Thus, the plastic arts of sculpture and painting are servile in the manner of their operation, but their products are not operably useful. We speak of such products as things of beauty rather than of use, or as works of fine art. (It should be noted that they may have utility as means to such ends as æsthetic pleasure or enjoyment, decoration, education, etc.)

c. If they are not operably useful, they cannot be substances or physical things. What, then, is the mode of existence of a statue, taking this as representative of all servilely produced fine art?

(1) A statue is not the substantial form of the matter operated upon in its making. The substantial form of the matter out of which the statue seems to be made is wood or marble or bronze.[15] (Thus, Aristotle says we should speak of a

[15]It may be argued that whatever analysis applies to the form of a statue carved in stone should also apply to the form of a chair carved in stone. If stone is the substantial form of the matter out of which the statue is made, so is it in the case of the chair. If the chair is quasi-substantial, so is the statue. But this is not the case, as can be seen in terms of the individuality of the statue. It is not the stone as such which individuates the form of the statue and makes it "this statue", but rather a set of accidents, potentially in the stone, which the artist selects to realize in constructing the statue. The artist here makes the individuality of the statue. But in the case of the artificial form chair, it is individuated by the already existing accidents of the stone as its prejacent signate matter. Therefore, the composition of a chair is different from the composition of a statue: the former is a specific form imposed upon a prejacent matter and individuated thereby; the latter is an individual form constructed out of a selected set of accidents of prejacent matter. The set of accidents is the matter of the statue, not the stone; the stone is the matter (or the material) of the chair.

statue coming to be from bronze, not of the bronze becoming a statue. *Physics*, I, 7.) The *same* statue can be made of different physical matter; the model can be cast in different metals. Consider here the point made in *Sum. Th.*, III, Sup., Q. 79, A. 2, ad. 4. (Note: This will not hold for paintings.)

(2) Furthermore, the statue, which thus seems capable of being reproduced, is not a species of which these reproductions are instances, as in the case of useful things. The statue is an individual without being individuated by physical matter.

(3) The manner of artistic operation in the production of such works seems to be a case of change; the artist modifies the accidents of an existing substance or substances. (The statue is made by changing the shape of the stone: alteration. *Physics* I, 7.)

d. Such works of art are a peculiar composition of form and matter.

(1) Their matter consists of the accidents of common physical matter. (Thus, shapes, planes, sizes, etc., in the case of sculpture; shapes, colors, etc., in the case of painting. These accidents of common physical matter are the elements of the art.)

(2) Their form is the proportion of these accidents arranged as the parts of a structure (a construction).

(3) This form and matter are actually inseparable, as the specific form and proper matter of natural species are inseparable. But the form is not a substantial specific form, but the form of an individual thing which does not exist as a first substance. (The tractability of the elemental matter of the plastic arts shows that it is not physical matter. See Taylor, *op. cit.*, p. 417.)

(4) In an organic substance four compositions can be distinguished: (a) of specific form and signate matter; (b) of whole and parts; (c) of subject and accidents; (d) of essence (the individual nature) and existence. But in a servile work of fine art the first three of these distinctions cannot be made: it is at once a union of form and matter through being a whole or proportioned parts, and it *is* its individuality so that it cannot be a subject having accidents. It is, therefore, incapable of change. (The work of art is made at its acme; it does not grow or develop. See Taylor, *op. cit.*, 417-418. Thus, a different statue is produced with every change in the accidents of the marble, but each of these statues is in itself unchangeable. The statue the artist makes is the last of a series of statues he has produced in the process of making it. Cf. *Con. Gen.* III, 100. Strictly, the work of fine art, servilely produced, does not come to be any more than accidental forms

do. Something comes to be through it; thus the bronze becomes a statue. Yet from the point of view of the *individuality* of the statue—in which respect it is like a substance rather than an accident—it can be said to come to be. It comes to be through an ordering of accidents. The architect is not the cause of the being of the house; no more is the sculptor the cause of the being of the statue. He causes its becoming. The being depends on the *nature* of its *material*, just as its becoming depends on the actions of the sculptor. *Sum. Th.*, Q. 104, A. 1; *Con. Gen.*, III, 66.)

e. A work of fine art, manually produced by the modification of a physical substance, does not exist substantially. As a whole it exists only as the accident of a substance. But, unlike an ordinary accident, it is a composition of accidents having as such a unity and individuality, a unity of matter and form. It seems to be an imitation of a substantially existing thing.[16]

(1) Sometimes the individuality is separable from signate matter, as in the case of a modelled statue cast in different metals; sometimes not, as in the case of a painting.

(2) But in either case, the work of fine art has individuality without substantiality.[17]

(3) That the work of fine art must be made as an individual, whereas the work of useful art is made as an instance of a species capable of artificial reproduction, accounts for the difference between the useful and the fine arts with respect to rules. Art exists as a habit (fixed rules of operation), but since rules are always general, there cannot be rules of fine art in so far as the *individual* thing is the work to be done. (Maritain, pp. 18, 45-49. "The artist has every time a fresh and unique way of conforming to the end, and so regulating the matter.")

3. A free work has been distinguished from a servile one in that the latter is an effect produced in physical matter. We must now go on to say that a free work is a composition produced primarily in the soul of the maker, and secondarily in the souls of others.

a. The matter of a free work consists of accidents of the soul; such works are made either of sensible and imaginative matter or of intelligible matter. This is the basis of the distinction, in the field of free works, between the fine and the speculative. Thus, the liberal arts, narrowly defined, are the free speculative arts of the trivium and quadrivium, whose products are knowledge (propositions, syllogisms, sciences). Music and poetry are also free arts, but fine, since their matter is sensible

[16]It may be objected that chairness is no different as the accident of a substance since it too is a complex accident. But there is a difference. The statue being as a whole the accident of a substance is itself complex in being a proportion and ordering of many accidents of the substance. But chairness as a form is not complex in the same way: its parts are not accidents of wood but pieces of wood. A chair as accidental is not an arrangement of accidents, but an accidental arrangement of substances. This is its quasi-substantiality.

[17]Whereas the work of useful art has individuality only through its quasi-substantiality.

and imaginative. They arrange sounds and images in the soul, as logic arranges concepts and arithmetic numbers. (Maritain, p. 21.)

b. Like a statue or a painting, a poem, a piece of music, a proposition or a science is an individual thing which imitates substantiality but does not exist substantially. The poem and music differ from the statue or painting only in the locus of the accidents of which they are compositions; in the one case, the soul, in the other, physical matter. This difference has a number of consequences.

(1) The work of free art, fine or speculative, is the product of an intrinsic operation: the maker modifying his own soul. The work of servile art, whether fine or useful, is the product of an extrinsic operation: the maker modifying external matter.

(2) Secondarily, however, the work of free art can be made to exist as a composition of accidents in the soul of another. It is capable of communication by means of symbols. The writing, speaking or other physical rendition of music, poetry or science is an extrinsic operation, which is clearly secondary, depending upon the primary production of the work in the soul of the maker. (Maritain, p. 21.)

(3) The communication of a work of free art by means of symbols reproduces it. Such reproduction is the analogue of manufacturing in the case of useful arts, but with one important difference. The reproductions made by manufacturing are individual instances of the species, which is the primary product of the useful making; the reproductions made by communication are the *same individual thing*, occupying different souls simultaneously.

(4) Servile works which are fine are anomalous in this respect. The anomaly is, however, not intrinsic to their nature. It is not impossible that a notation will be discovered to symbolize plastic works, as a notation has been invented for the dance; in which case, their mode of existence will be *free*, like the other products of fine art.

4. The distinction between useful and fine productions can be developed apart from the distinction between servile and free productions. The formal differentiation is in terms of substantiality (the useful)[18] and individuality without substantiality (the fine). We can ignore the anomalous character of the plastic fine arts as they presently exist, and treat all fine works as essentially free. (For the sake of brevity we shall ignore in this discussion the free arts which are speculative rather than fine.)

a. The analysis so far would seem to indicate that all useful works have as their generic object of imitation naturally propagated substances, whereas fine works have as their generic ob-

[18]The "substantiality" of useful productions, spoken of here and elsewhere in the text, must be understood as the quasi-substantiality which previous notes have tried to define.

ject of imitation any substance, whether naturally propagated or artificially made.[19]

b. But we can now advance that analysis by analogizing man's work and God's. Useful products are to works of fine art as, in the Divine creation, corporeal substances are to spiritual substances, the angels. (The fine arts, says Maritain, stand out in the genus art as man does in the genus animal. Pp. 33-34. They have a spiritual soul. Maritain is here thinking of fine plastic works, servilely produced. But fine works are essentially free, and as such they stand out as angels do among created things.)

(1) The work of useful art is corporeal and substantial, and its substantial form is a species, capable of occurring in individual instances differentiated by their signate matter. Like the naturally propagated substances it imitates, it is capable of change without loss of identity, even though it is not alive, cannot grow or reproduce itself. (It has a passive potentiality for change.) Being a composition of physical matter and substantial form, it cannot avoid dissolution. Like the naturally propagated substances it imitates, it *seems* to be both generable and corruptible, although strictly it is not generated but made.

(3) The work of fine art is neither corporeal nor substantial, but it has individuality and this individuality is like the specificity of the angelic nature. As each angel is a separate species, differing only essentially from all other angels, so a work of fine art is like a species in that its essence is its individuality. (In incorruptible things, there is only one individual in each species, but in things corruptible, many individuals are needed to preserve the species. *Sum. Th.*, Q. 47, A. 2.) It is not a composition of essence and accidents. Like an angel, it is a contingent being only in that its essence does not involve its existence. The accident of its existence, in so far as it exists at all, is the result of human making. It imitates the substantiality of angelic existence as the work of useful art imitates the substantiality of corporeal existence; the former is to the latter as the imitation of a separate substance is to the imitation of a composite substance.

(4) Like the angelic substance which it imitates, it is incapable of substantial change. As the angels are æviternal (*i. e.*, changeless, unaging created beings), so works of fine art have a kind of æviternity: they come into being through human making, but once made they *can*, though they do not necessarily, endure without change through-

[19]The concept of imitation involved in the notion of substance as the generic object which works of art imitate is metaphysical rather than æsthetic. (The species of fine art are distinguished by reference to different æsthetic objects of imitation.) The *being* of any work of art is here considered: its being is artificial as imitative of natural being of the substantial order.

out all time; and so long as they do endure, they cannot change. They have, in short, a possible or contingent æviternity, whereas angels have an actual and necessary æviternity.

(5) Only the generable is strictly corruptible. Angels are incorruptible because created, not generated. (*Sum. Th.*, Q. 46, A. 1, ad. 2.) So works of fine art are made, not generated, and made in such a way as to be incorruptible. They can cease to be only through being lost or forgotten in some sense, but not through a dissolution due to the potentiality of their matter for perishing.

(6) Finally, as angels move in a spiritual manner, occupying different places intensively, so works of fine art move from soul to soul by means of symbols, residing in any soul intentionally. As useful works, imitating naturally propagated substances, are artificially propagated by the process of manufacturing, so fine works, imitating spiritual substances, are artificially moved by the process of symbolic communication and through such movement seem to have a multiplicity of being.

c. In the light of the full development of the analogy between God's work and man's, we can see that the basic difference in human products (whether they be useful or fine) is related to an essential difference in their generic objects of imitation. Man as a maker imitates God as a creator; his works imitate both the physical and the spiritual creation.

d. As it is said of the hierarchy of the sciences that physics (knowledge of corporeal substances) is the science cognate with man's composite nature, so it may be said of the hierarchy of the arts, that useful making is the productive operation cognate with man's corporeal nature. (This may be what Maritain means by saying that useful art is the generic type of all human art. P. 50.) Mathematics and metaphysics are, in a sense, too abstract for man fully to master: they reach antinomies and insolubilia. So in the operations of fine art, man reaches beyond his powers. This is indicated by the paradox that fine arts are inadequate with respect to rules. (In both mathematics and metaphysics, man touches on the transcendentals; so in the fine arts, he aims at the transcendental, beauty, and seeks to imitate God's spiritual creation, which is above his knowledge. In physics and in the useful arts, man's knowledge and operations stay within the categories. Nevertheless, it can be said that in the fine arts man, making a spiritual world, most especially imitates the Creator. Cf. Maritain, p. 124 and note 164.)

5. This brings us back to our basic problem. What is human making, since it cannot be generation, in the sense of natural propagation, and since it cannot be mere change or motion, in the sense of accidental modification?

a. Physical analysis has shown us that the actual process by which man makes *seems most like* a process of change. This is true both of man's useful and of man's fine making, his servile and free making.
   (1) Thus, man makes a bowl or a ring by shaping (altering) natural substance, or a house by putting together different materials; so he makes a statue by shaping and altering, or a painting by putting together; so also does he make music, poetry and science.
   (2) The difference between the useful and the fine arts is not in the physical process of making but in the metaphysical status of the thing made (a quasi-substantial thing or an individual, existing only acidentally).
   (3) Although the physical process appears to be the same, the useful bowl is a union of substantial form and matter, whereas the statue is marble having an accidental shape with the similitude of man.[20]

b. Despite the physical analysis, man's making cannot be mere change because of the metaphysical character of the thing made: a substance, in the case of useful productions, an æviternal individual, in the case of fine productions.[21]
   (1) Useful works make the problem plain and inescapable. Substances cannot be produced by motion (accidental change).

[20]Again it is necessary to return to the notion of the quasi-substantiality of useful productions, their being neither fully substantial nor simply accidental. The doctrine of the unicity of substantial forms (*Sum. Con. Gen.* II, 58, 72, 54) rightly requires us to recognize that if useful things are made of prejacent matter, the artificial forms thus imposed cannot be substantial in a strict sense. But if there is a paradox in the notion of quasi-substantiality, there is also a paradox in the nature of man and the soul. The human soul is at once the substantial form of the human body and in itself self-subsistent though not fully substantial; thus, man, the composite, is an essential unity and the soul is immortal, though as separated it is an incomplete substance. (*Sum. Th.* Q. 75, A. 2, ad. 1.) There is no incompatability, it is said, between the status of the soul as substantial form and as self-subsistent, or between the self-subsistence of the soul and its incompleteness as a substance, an incompleteness which matter is required to perfect. The quasi-substantiality of useful works involves an inverse analogy. As the soul is both substantial form and self-subsistent though not a complete substance, so the *materials* out of which useful works are made can be viewed as self-subsistent complete substances and yet capable of receiving further determination, as if they were merely matter. These materials are substance and matter as the soul is form and substance; yet it must be admitted that the paradox of being incomplete and self-subsistent is of a different order from the paradox of being complete and the material part of a composite. There is a sense, however, in which the inorganic materials of artificial production are incomplete. They lack organization. Useful art completes nature by organizing inorganic materials. The artificial forms imposed by useful art are organizational. Such forms are imitations of the substantial forms of organic substances. It is through man's efforts that inorganic nature becomes more like organic nature. (The genus of artificial things is determined by a special kind of form, a form of composition. Thus, St. Thomas refers to "those forms which are of composition or order, as are the forms of things produced by art; so that if there be another distinct composition there is another distinct form of a house." *Sum. Th.*, III, Sup., Q. 79, A. 2, ad. 2. And, since the whole is to the part as form to matter, works of art are composite of form and matter: The compositional forms of useful wholes oragnize material parts, while the compositional forms of fine wholes organize accidents of matter or the soul. This explains the quasi-substantiality of the useful.)

[21]That making is not *mere change* can be shown as follows: When man acting on a substance changes it, he does so by depriving it of one accident which it already possesses and giving it a contrary or opposite in the same species; thus in alteration he changes the thing from red to blue; in local motion, he changes the thing from here to there. The thing cannot exist without having some particular color and being in some particular place even though these particular accidents are as such contingent. But when man produces something, he imposes a form upon substances

(2) Fine works, though not existing substantially, increase the subtlety of the problem by the manner of their being. Their individuality being a union of matter and form, they can not be merely modifications of existing substances.

c. The metaphysical analysis has confirmed the supposition which makes it impossible for making to be a kind of change or motion.

d. To solve the problem thus presented, so far as it is soluble, we must now turn to a psychological analysis of *poesis*.

IV. PSYCHOLOGY: MAN AS A CREATIVE AGENT—THE POWER OF MAKING.

1. The problem can be stated as follows: Just as Divine making (creation) is not change, neither generation nor motion, so human production is *making* and not generation or motion. But it is making without being creating in the strict sense. It is a unique process in the world, as unique as man is a creature, as unique as the metaphysical status of works of art.

a. This problem can also be stated in two questions:

(1) How can man make a self-subsisting substance, conceived specifically and individuated by its matter?

(2) How can man make a composition whose individuality is itself the thing made?

b. The first of these questions has been sufficiently explained by the preceding analysis. The second requires one further point of explanation.

(1) Man makes intelligently, that is, through idea and with foreknowledge of the thing to be made. (Reason is the first principle of all human work. *Sum. Th.* I-II, Q. 58, A. 2. See also Q. 14, A. 8, 9; Q. 15, A. 2, 3.)

(2) But man is incapable of having the idea or definition of an individual thing (*Sum. Th.*, Q. 14, A. 11), if by *having* is meant an actual possession of his intellect. John of St. Thomas speaks of our having an idea of an individual

which is not the contrary or opposite of one they already possess. Wood as it exists naturally is simply not-chair or not-ship. An artificial form, though it may be accidental, is thus different from all natural accidental forms, and since production is the imposition of artificial forms, production is not reducible to change which is always with respect to natural accidental forms. This can be seen in another way. A useful thing is a structure having parts; as such it cannot come into being merely through the changing of substances; thus, pieces of wood must not only be changed, but all these changed pieces of wood must be related in a specific way to make a chair. Similarly, in fine making, change is required to actualize the natural accidents to be used as the matter of the work, but the accidents must then be ordered and proportioned to constitute the unity or form of the work. In short, the physical process of change accounts for a thing's modifications with respect to simple accidents. But artificial forms, in either useful or fine production, are complex and organizational. As complex each is a unity produced out of a multiplicity: of substantial parts in the case of useful works, of accidents in the case of fine works. The physical process of change accounts for the parts or the simple accidents, but it cannot account for their organization into a unity. (Change is never the cause of a unity; alteration does not cause the resultant unity of subject and quality.) Since it is as this unity that a chair or a ship, a picture or a poem, comes to be, its coming to be is not fully analyzed as a kind of accidental change, as a motion. This point remains even though useful works are not genuinely substances, and even though the notion of quasi-substantiality be discarded. It is most clearly seen in the case of fine works, whose coming to be is the coming to be of an individual thing, though not substantial at all.

thing in the sense that we have the power of making it. But then the idea *is* the power, and we do not have the power through having the idea prior and independently. (Cf. Maritain, pp. 88-89.)

(3) This indicates the irregularity of the operations of the fine arts and why they exceed man's nature.

2. Both problems can be solved at once, however, by distinguishing between man as a physical individual and man as a spiritual (extra-physical) person.
   a. Man as a natural animal is limited in his operations to the procreation of individuals in his own species and to changing the accidents of things. He cannot make; he can only propagate or move in one or another of the accidental motions. (Man as a natural animal operates as a body; a body cannot create or make; it can act only by moving. *Sum. Th.*, Q. 45, A. 5.)
   b. But man as a spirit (as having a rational and self-subsistent soul) has extra-physical powers, and is, therefore, able to make extra-physically.
      (1) His process of making imitates the creative act. St. Thomas points to this analogy between human and Divine making. "As the giving form to a work of art is by means of the form in the mind of the artist, which may be called his intelligible word, so the giving form to every creature is by the word of God." *Sum. Th.*, Q. 74, A 3, ad. 1. ("As God makes created participations of his being exist outside himself, so the artist puts himself—not what he sees but what he is—into what he makes." Maritain, p. 95).
      (2) His process of manufacturing or, more strictly, machinofacturing imitates the natural process of propagation.
      (3) In the operations of his practical arts, man imitates the natural process of accidental change.
   c. As Maritain says, man "creates" by making use of created matter, and thus creates as it were in the second degree.[22] "Artistic creation does not copy God's creation, but continues it." (pp. 63-64.) It seems indifferent whether we speak of man's making as creation in the second degree or as an imitation of Divine making.
      (1) As nature continues God's work in propagation, so man continues God's work in artistic production.
      (2) Thus, in a sense, nature is an artist imitating God and continuing his work, and man—the noblest corporeal creature—is supremely the artist, the natural artist, imitating God. But man is not entirely corporeal, and to this extent man imitates God directly, rather than indirectly by imitating nature.

[22]Creation in the second degree can be understood as second causes operating on second matter to produce second substances, not merely universals in the category of substance since universals cannot be produced, but the quasi-substantial subsistent unities of works of art. (Cf. Pegis, *op. cit.*, pg. 44; Aristole, *Metaphysics*, 1033b5.)

d. *Poiesis*, in short, is an intellectual and hence a spiritual not an animal power. Man's making proceeds from his intellect and not from his body and its animal motions. (Vd. *Sum. Con Gen.* II, 76.)

(1) The intellect is the principal cause and the body the instrumental cause in all servile making of artificial substances. The intellect as principal cause is also the formal cause, the cause of the essence of the thing made. The body as instrumental cause is also the efficient cause, the cause of the becoming as a process. But the matter out of which the thing is made is the cause of its existence, which is in no sense caused by the maker. (Manual dexterity is a requisite condition of production, but extrinsic to the virtue of art. Thus, the intellectual habit (art) is to the muscular habit (dexterity) as the spiritual cause of the production is to the bodily cause. Maritain, pp. 13, 53.)

(2) Man makes at once both as a body (changing things) and as a spirit (forming things). (The picture is wholly of the brush—as instrumental cause—and wholly of the painter—as principal cause. Maritain, pp. 133-134.)

(3) The intellect is the principal cause, and sense or imagination the instrumental cause in all free making. This accounts for the fact that works of fine art—which are essentially free—resemble the soul of the maker, more than works of useful art, manually produced out of external matter. But in either case, *poiesis* is a spiritual and partly extra-physical power which enables man to imitate the Divine creation by making things in his own likeness and image.[23]

V. CONCLUSION.

1. This analysis, through revealing the extra-physical character of human making, demonstrates *a posteriori* the spirituality of man. If man's making cannot be propagation and cannot be change, and if these two exhaust all natural (physical) process, then making must be a supernatural (extra-physical) act and the maker a supernatural (extra-physical) agent. If man were not a spirit, if his soul were not a separable substance, his power to make would be an impenetrable enigma.[24]

[23] Man's children, resembling him in species, are the *image* of man's composite, or specific, nature. Man's works of useful art, generically like him in being corporeal things, are *traces* of his nature. But man's works of fine art, incorporeal and aeriternal, are the image of his individual soul. (*Sum. Th.*, Q. 93, A. 2, 6, 9.)

[24] This *a posteriori* demonstration of the soul's self-subsistence from the facts of making can be summarized as follows: Man makes, intelligently, and not by bodily motions alone, since the work of art as an individual whole cannot be the term of a corporeal motion. Man's intellect and man's body are related as principal and instrumental causes of the thing made. But the principal and instrumental causes cannot be of the same order; therefore, an intellect, having the power to make by using bodily motions instrumentally, cannot itself be the act of a bodily organ. For a discussion of principal and instrumental causes, see *Sum. Th.*, Q. 105, A. 5, ad. 2; Q. 118, A. 2; Q. 88, A. 1, and *Con. Gen.*, III, 70, 103, 147.) Similarly, in understanding and in voluntary action there is a composition of the intellect and the body as principal and instrumental causes which establishes the incorporeality of the intellect as an agent, and hence as a being.

2. Furthermore, it can be seen that spirit in man, as in the case of the simple spiritual substances, has the same essential properties of freedom, understanding and making. Just as the angels are reflective agencies of creation through being created intelligences, so man, the least among spirits, is nevertheless a secondarily creative agent because he is an intellect.[25] (*Sum. Th.*, Q. 74, A. 2.) The difference lies in the fact that man's unseparated spirit operates somehow as part of a composite substance.
3. But this analysis does not remove the profound mystery of *poiesis* as an imitation of creation. Rather it locates the mystery. (Mysteries are discovered by pushing analysis as far as it can go. The principle of intelligibility is also the principle of mystery. There can be no mystery where there is nothing to know; mystery exists where there is more to be known than is offered to our apprehension. Maritain, p. 28, fn.)
   a. God is the principal cause of man's creativity and man's created spirituality is the instrumental cause as, in human making, the spirit is the principal cause and the body the instrumental cause. (This does not mean that man *creates* anything, even instrumentally. Man's creativity is in the second degree, imitative making.) But we cannot understand God's creativity, and hence human making is essentially mysterious.
   b. Moreover, we cannot fully understand the presence of spirit in a composite substance. This is the mystery of the immortal soul, a separable though incomplete substance, but in a substance in its unseparated state. (This mystery can also be seen in that man makes both physically and spiritually; his productions, particularly useful things, are wholly of the body—as instrumental cause, and wholly of the spirit—as principal cause.)
   c. The mystery of the active intellect, the mystery of free will, the mystery of *poiesis* are three aspects of the same fundamental mystery of the being of the soul in human life. (Thus, man as a natural animal is causally determined, but man as a rational being is free; so man as a natural animal can only procreate or change, but man as a rational being can make in a way that imitates creation.) Knowledge is the intellect demonstrating, art the intellect operating productively, and morality, the intellect directing free action. (Maritain, p. 20.)
   d. That man can understand, that man is free, that man can make imitatively, demonstrate *a posteriori* that the soul is, but they do not explain what the soul is or fully analyze the manner of its operations. Our understanding of the nature of the soul and its operations is, like our understanding of the Divine nature and the angels, only analogical.
4. As the mystery of *poiesis* is connected with the mystery of the hu-

[25] This does not mean that either angels or men are instruments of primary creation. (*Sum. Th.*, Q. 22; *Sum. Con. Gen.*, II, 42, 43.) It means only that man's creativity in the second degree, his imitative creativity, follows from his being created as a spirit.

man soul, so the mystery of creation is connected with the mystery of the Divine Nature, the mystery of the Trinity. (Cf. Maritain, p. 126.)

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PART II—*Beauty in Nature and in Art.*

My contribution to this round table conference will be nothing more than an attempt to propose for your discussion a problem in the metaphysics of the beautiful. Whatever I shall say by way of introducing the problem, I trust you will consider as merely intended to define the question with some accuracy and to put it in its proper setting; not as a series of propositions upon which our discussion this afternoon should centre. It would require more time than we have at our disposal to discuss in detail all the questions which you might raise *apropos* of those introductory remarks. Also, that would carry us far afield from the subject of æsthetics, upon which we are expected to concentrate in this round-table meeting.

Beautiful things, says Saint Thomas, are those which please on being seen. As Mr. Eric Gill remarks in reference to this statement of Saint Thomas, "this is an obvious fact. It is neither a definition of beauty nor of beautifulness, it is simply a statement of fact" (*Art*, 1934. p. 127). However, Mr. Gill is not disturbed by the lack of a definition, because after all, he says, "everybody knows what beauty is, because everybody knows what he likes." (*Clothes*, 1931. p. 8).

Although the question of beauty is, perhaps, not quite so simple as that, at least, we can make a start with these statements of Saint Thomas and Mr. Gill. It is well known that neither of them let the matter rest there. Saint Thomas goes beyond this empirical description of the beautiful and develops a much more precise explanation, something more closely approximating a definition, when he enumerates the three attributes—*claritas*, *integritas* and *proportio*—which all beautiful things possess. Neither is Mr. Gill at all satisfied that his apt epigram covers the whole problem. He still writes books and articles, carves statues and engravings to emphasize by his words and his works the truth which he states so simply.

It is, however, encouraging to note that the greatest philosopher of the Middle Ages and a great sculptor of our own day can discuss the problem of beauty in such simple language. Perhaps, when we get through trying to elucidate the question, we shall gratefully return to the clear and simple words of Saint Thomas and Eric Gill and console ourselves with the the thought that, in spite of our efforts to embroil the issue, we still know what beauty is because we know what we like, and we can still be pleased when we see those things of beauty which are a joy forever.

Things which please on being seen are not all of the same sort. Some belong to the physical order of things, like trees, mountains, the

sea, sunsets, clouds, storms, birds, flowers and so forth; others are things which men make primarily for some useful purpose, buildings, bridges, furniture, speeches, bodily exercises, certain kinds of music, clothing, books and a host of similar things; finally, there are other things made by men primarily to be beautiful things, not primarily because they are useful, but because they are necessary for the fulness of human life. Such things are the works of fine art—the beauty arts (*les beaux arts*, as the French so aptly say). But, whether they be things of nature, artificial things made principally for use or artificial things made principally to be beautiful, their beauty pleases when seen and each pleases in its own peculiar way. The pleasure which comes from seeing a gorgeous sunset is not the pleasure derived from beholding an aptly arranged machine-shop nor is either pleasure the same as that which we feel in the presence of Fra Angelico's *Annunciation*.

In all these things, however, there is beauty, though their beauty is of a different order in each case. Could we succeed in really *seeing* anything whatsoever in its very being we should *eo ipso* see its beauty. For beauty is a transcendental property of all things which are. Just as there are some truths which we can more readily grasp, so there are some things whose beauty we more easily perceive. But, also, just as all things are true, so are all things beautiful.

Things which belong to different orders of existence do not share univocally in a common nature but they do share analogically in being. The beauty of things belonging to different orders of reality—physical, artificial, artistic—will likewise be analogical, since it is proportional to their being. For, when things are what they ought to be, and precisely in the measure in which they are what they ought to be, they are beautiful. The beauty of a creature of God, be it inanimate, living, or human, is in its being what God intended it to be when He created it. Since all creation (man excepted) necessarily fulfils the designs of God, the only truly ugly thing in the world is man's voluntary opposition to being what God wanted him to be.

In the realm of artificial things, however, things which serve some purpose are beautiful in so far as they are apt to serve that purpose. In art the things made by man to be beautiful are beautiful when they are what they should be, *i. e.*, what the artist, faithful to his medium, skilful in his technique and humble before the things which God has made, intended them to be. Thus the beauty of things is porportional to what they are; in other words, beauty in analogical to the different orders of things beautiful.

I should like, now, to ask you to consider some aspects of the metaphysical structure of things in these three orders—the physical, the artificial and artistic—and to compare them with the orders of truth and goodness in order that we may make a closer approach to the metaphysics of beauty.

Things in the physical order, the order of nature, have natural forms, substantial forms, as they are called. These forms are the source of all powers and operations which flow from the nature of

the things constituted in their specific existence by them. The form thus specifies the activity which the things exercise in pursuit of their natural end. For there is in every existing thing a tendency to self-realization, a tendency specified by the form and oriented towards the fullest realization of that form compatible with the individual conditions of the thing's existence. A natural form, therefore, is not primarily intended to manifest the beauty of the thing which it specifies and informs, but rather, to give to the thing all that its nature requires for its existence and activity. The form is thus the basis of the intelligibility of the thing, the source of its goodness, and the foundation of its beauty as it is its essential constitutive factor. More precisely, because it is in virtue of their forms that things are what they are, it is in virtue of their forms that they are good, true and beautiful. The distinction between *being—tout court*—and being true, good and beautiful, is a distinction between various modes of existence of the self-same form. For a thing to *be* in *rerum natura*, its form must exist in a *physical* mode of existence; to be known as true, (by any mind but the mind of God) its form must possess an *intentional* mode of existence; to be loved as good, its form must have a *tendential* mode of existence (*amor meus, pondus meum*, says St. Augustine and St. Thomas calls this mode of existence a *modus tendentiæ*, an existence *per modum ponderis vel attractionis);* may we therefore conclude that, to be admired as beautiful, the form of the thing beautiful must exist in a special mode of existence which may perhaps be called an *æsthetic* mode?

This is the question which I should like to propose for your discussion this afternoon. May I, therefore, suggest some thoughts which, I believe, may give appropriate orientation to the discussion of it.

Since the particular problem with which we are at present concerned is the problem of beauty, it would be out of place to enter upon a study of the intentional mode of existence and the tendential mode of existence. I shall, therefore, take it for granted that what St. Thomas and his commentators have written on these points is, in substance, accepted. Recent writers like Maritain, and Yves Simon, have dealt at length with the peculiar mode of existence which the form receives when the thing is known as true. The tendential mode of existence has as yet received less attention—the problem of the good offers many thorny difficulties. The, in my opinion, most suggestive recent study of this point is to be found in an article published in the *Archives d'histoire doctrinale et littéraire du Moyen Age* for 1931, by Father H. D. Simonin.

Leaving aside these two interesting and important problems, I should like to offer for your discussion a tentative approach to the problem of a special mode of æsthetic existence suggested by the apprehension and enjoyment of the beautiful.

It is well known that St. Thomas places beauty in the order of formal causality—*pulchrum*, he says, *pertinent ad rationem causæ formalis* (S.T., I, q5, 4, ad 1)—yet something of final causality like-

wise enters into the concept of the beautiful—*pulchrum est idem bono, sola ratione differens* (S.T.I. II, q27, 1 ad 3)—*pulchrum et bonum in subjecto quidem sunt idem quia super eamden rem fundantur, scilicet super formam* (S.T. I, 5, 4 ad 1). Moreover, it may be asserted on general Thomistic principles that nothing is entirely itself if the end for which it is destined is excluded. *"Forma est finis"* as St. Thomas repeats after Aristotle.

The end towards which forms in their physical existence orient the activity of the things which they inform is the complete realization of their specific nature. The end towards which forms in intentional existence orient things is truth. The end towards which forms in tendential existence orient things is love. What, then, of beauty?

Here we may once more distinguish between the end of things made for use and the end of things made to be beautiful. The useful is for an end, as a means is for an end. The useful is not an end in itself. Even though it may be pursued and desired as a certain objective, the useful as such is a means to an end. Furthermore the end for which the useful is destined immediately is not the ultimate end but an intermediate end. The beautiful, on the contrary, is an end in itself—not indeed the ultimate end, unless we transcend the order of created Beauty—but an end which is a means only to the ultimate end and not to any intermediate end.

Now, taking art in a very restricted sense—the right way of making beautiful things for the sake of their beauty—we may exclude from the connotation of the term art, in this restricted sense, the training of natural tendencies in order that they may the better achieve the end for which they are proportioned. Thus education, the training of animals, the cultivation of plants and flowers, etc., would not be artistic in this restricted sense. Similarly, the work of the artisan in making things for use, in so far as we consider the fact that they are made for use, is not artistic in this restricted sense. Both of these activities, the training of natural tendencies and the making of things useful, may be and frequently are productive of beautiful things. However, it is not formally in virtue of their specific character of making that they produce beautiful things but rather *par surcroit*. The making of things to be primarily beautiful things, effects a certain transposition of the natural capacities of things—the material or the medium—to a different plane than that of their natural finality or that of utility. Thus the artist is selective and he does not need for his purpose all the multifarious qualities, masses, and characteristic of the thing in its physical nature but, because he endeavours to speak to the mind rather than to the senses, he can achieve his purpose with a line, a curve, a high-light, and neglect a thousand other things found in the materials with which he works. But the power of transposing his materials to the level of æsthetic expression is not an arbitrary thing subject entirely to control of the artist. One cannot do with marble what one can do with paint or with sound. The limitations of the various mediums of artistic expression are inscribed in the very nature of the mediums themselves and the

artist must submit himself to those limitations. He can and does, however, strip his materials of all but those characteristics which can be used as *signs*, to convey to the beholder of his work the æsthetic meaning (the truth and goodness) of the thing made.

It is here we may perhaps look for some intimation of the mode of existence which the beautiful as such possesses. The æsthetic experience is founded in an apprehension, but not upon the intuition of "being-concretized-in-sensible-quiddities" of which Cajetan speaks with such confidence and satisfaction in his discovery (*"Forte adhuc viris doctissimis non innotuit"*). Yet, there is some sort of intuition which includes at once the quiddity of the thing apprehended and the goodness of the thing in its concrete individual existence. Sense knowledge, appetition, and intellectual apprehension converge in the æsthetic experience and give rise to a relation which is neither purely intentional (cognitional) nor purely tendential (appetitive). We do not tend towards the beautiful as we tend towards the good, *i. e.*, in order to possess it. Rather, the perception of the beautiful puts us in possession of the thing in such a manner or mode that we can rejoice in that possession as we may rejoice in the acquisition of the good *(quietudo appetitus)*, yet admire the thing in its physical reality disinterestedly, *i. e.*, without desiring, in order that our hunger for the beautiful be satisfied, to possess it in its individual, physical being, as we do in contemplating the true. As the being of a thing exists as true in knowledge in a mode analogical to the mode in which it exists as good in tendency or appetite, I suggest that it also exists as beautiful in the æsthetic experience in a mode analogical to the intentional and tendential modes and that this mode may be more accurately determined by a deeper investigation of the relation of *a sign to the thing signified* as this relation can be discovered in the convergence of sense knowledge, appetition (both sensible and intellectual) and intellectual apprehension. This, then, I leave for your discussion.

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SUMMARY OF DISCUSSION IN DIVISION D.

Fr. McCormick: That which is produced by free work has individuality but not substantial form; that which is produced by servile work has substantial form. In what sense can you say the second part of the proposition?

Dr. Adler: The definition of a ship involves matter in such a way that ship exists as a composite.

But if we ignore how things came into being and look at them only as they exist, then, taking chair as an example, the chair is not wood, not a substance, but just chair with form of chair.

Fr. McCormick: Chair is something made by man. As such is not a substance. Originally it had a substantial form of wood. You

cannot give wood another substantial form without removing the first substantial form.

Prof. Adler: Wood is both form and matter. "Chairness" is an accidental form. Chair hasn't essence, therefore hasn't definition.

Drs. Phelan and McCormick agree that a substance equals prime matter and substantial form. Therefore, chair is not a substance.

Prof. Adler: Perhaps the question involves an acceptance of subordinate forms.

Dr. Phelan: Doesn't that involve a rejection of the Aristotelian system?

Prof. Adler: Common matter in a bird and a man is not the same.

Dr. Phelan: For St. Thomas there are no differences in matter.

Prof. Adler: No, there are no differences in prime matter—only in substances. But chair is no longer wood for it is dead wood. Chair itself is a substance. Moreover, if the chair is altered and undergoes change, substance is changed and so chair is changed. If we speak of wood, the wood then only is substance and the chair is not a substance.

Dr. M. Sullivan: It seems we should investigate the essential notes that enter into composition. How should the wood of chair enter into composition, as matter or as substance?

Suggestion from floor: Could you speak of essence instead of substance? Accidents have essence but are not substances. As an essence the chair could have a definition. You can change a chair accidentally.

Prof. Adler: But an accident cannot change.

Dr. Phelan: But how about a modal change like motion? Can you change a chair by making it red or blue?

Prof. Adler: Is blueness in wood as "chairness" is in wood? What category is "chairness?"

Dr. Phelan: Posture.

Prof. Adler: Is a pearl made by an oyster? Is it a substance? It is certainly not made by propagation.

Dr. M. Sullivan: There does not seem to be enough emphasis on intrinsic principles. Is propagation the criterion of substantial change?

Dr. Phelan: Has bread a substance? or should you speak of the substance which is bread?

Fr. McCormick and Dr. Phelan agree on saying the "substance which is bread."

Dr. Adler proposes an alternative solution. Accidental forms are accidental categories produced in substance. There is an imitation of substance. The difference between useful and fine arts could be expressed as different imitations of substantiality.

Dr. McMahon: "Chairness" cannot fit into a category. A category is a metaphysical form of *ens per accidens*. A chair is a collection of entities.

Dr. Adler: Aristotle certainly talks about artificial things as if they were substances.

Fr. McCormick: Aristotle is misleading.

Dr. Adler: But is there anything in the texts to prevent me from reading them that way?

Dr. Phelan: The texts on prime matter would indicate these others are misleading.

True a chair is a collection of entities.

Posture is the arrangement of anything of its parts in respect to their place.

Dr. O'Grady: Is there no composition in the angel?

Prof. Adler: There is no other composition except essence and existence.

Dr. O'Grady: But what about the relation substance and accident?

Prof. Adler admitted this composition, too.

Dr. O'Grady: The individual thing has an essential quantum, but how much wood is necessary?

Discussion of Dr. Phelan's paper.

1st Questioner: Is there a difference between beautiful things?

Dr. Phelan: Each is proportionally beautiful to what it is.

2nd Questioner: What is your translation of *visa?*

Dr. Phelan: Seen. As to the meaning of the word seen, refer to writings of Eric Gill.

2nd Questioner: In prolonged contemplation of object not possessed can you speak of beauty?

Dr. Phelan: Yes, the object is present to mind.

2nd Questioner: What becomes of fine impressions, their vividness, after many years?

Dr. Phelan: Fine impressions may become a *habitus* which is a subdivision of quality. The vision is not so vivid through imagination and memory as it is through the senses.

2nd Questioner: What is the meaning of "placent?"

Dr. Phelan: It is not sensible pleasure that is referred to—but that which gives joy.

2nd Questioner: Would there be pleasure in seeing a thunder storm?

Dr. Phelan: Yes, if fear did not blind you to the magnificance of the thunder storm.

2nd Questioner: What is the meaning of *"quae"?* It seems *quae* is limited to a select group.

Dr. Phelan: *Quae* means all being.

2nd Questioner: I cannot see how an uninstructed person can see all as beautiful. Only disciplined mind seems to be included under the *"quae."*

Dr. Phelan: True, education is necessary but beauty is omnipresent but not always seen.

Then how is *quae* universal?

Dr. Phelan: The definition is concerned with objective aspect of beauty. All things have beauty. The other aspect is the subjective one.

2nd Questioner: "Placent" would have to be universal?

Dr. Phelan: *Anything* which pleases on being seen is beautiful.

2nd Questioner: Wouldn't that exclude an objective standard?

Dr. Phelan: No, we are talking about things.

1st Questioner: Is there the same amount of beauty in nature as there is in a poem?

Dr. Phelan: It is not a question of amount. In beauty there is no common category. It is a transcendental.

Fr. M. Sullivan: Would you explain what you mean by the intuitive grasp of reality?

Dr. Phelan: According to Cajetan that which is grasped by sense and intellect is being in which there is as yet not differentiation of substance and accidents. It is grasped as a whole. The differentiation comes later.

So in beauty there is coöperation of sense and intellect with will (visa—intellect; placent—will) "*quae*"—the individual thing is seized only by powers of sense.

Also as the thing is transposed to an intentional mode of being in the apprehension of truth and to tendential mode in the apprehension of the good—there seems to be needed some transposition of being in the seizing of the beautiful.

Could you say that the beautiful is the object of a "cognitive appetite"?

Dr. Phelan: The term "cognitive appetite" might be acceptable if it was not identified with the will as distinguished from sense appetite.

Prof. Adler: Is the intuition of the beautiful without concept?

Dr. Phelan: Without differentiated concept. The mystery of the individual and mystery of the beautiful is the same.

Prof. Adler: There is a commensurate enjoyment in proportion to education. According to the example suggested by someone, a person would not be able to get the individual thing in a poem of Donne but would get it in Edgar Guest.

What would the critic do in that case?

Dr. Phelan: He would either be a man of good taste or just a technical critic who would say whether the thing is what it ought to be.

What is the difference between the good and the beautiful?

Dr. Phelan: Being in relation to the intellect is true. Being in relation to the will is good. Being in relation to the total apperceptive process is the beautiful.

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RADIO ADDRESSES DURING THE ELEVENTH ANNUAL MEETING

Published in the interest of a wider use of local radio stations for popular presentations of Neo-Scholastic Philosophy.

Everyman's Philosophy

(STATION WTAM)

Several years ago Will Rogers was asked to write his philosophy of life. He answered through his Sunday newspaper article. He said, among other things, that he had been called many names during his lifetime, but never before had he been so misjudged as to be called a philosopher. Since his answer is typical of the attitude of many people towards philosophy, I feel duty-bound to tell you at the very outset that I am a philosopher. But I hasten to add that I am here in Cleveland to attend a convention of the American Catholic Philosophical Association. Conventions, you know, are believed to change people considerably, and since philosophers have the poorest reputation possible to begin with, any change that takes place must be for the better. Perhaps some such happy thought prompted the authorities of this radio station—whom I most heartily thank for the opportunity—to permit me to speak to you today.

I have often tried hard to find an explanation for this attitude of distrust which many people have towards philosophy. After careful consideration I have come to the conclusion that it is partially the fault of philosophers themselves. They are always much too apologetic and often very far removed from the world of everyday life. Almost every time one of them begins to speak he feels obliged to give an excuse for his existence. And then, when he says what he intends to say, he does so in a language which is extremely technical and seemingly unintelligible. Of course, people are somewhat to blame, too. They expect of the philosopher what they do not ask of the scientist; they expect to be able to read without previous training the most advanced books in philosophy, whereas they would not dream of being able to understand immediately the intricacies of psychiatry, bio-chemistry, or astro-physics. Yet the problems with which the philosopher deals are no less complex than those of the sciences which I have just mentioned. The philosopher, too, must attempt to explain life and mind and matter and the origin and arrangement of the universe. He must be somewhat pardoned, therefore, if, when he finds that people expect the impossible of him, he withdraws within the small group of those who understand and sympathize with him. Of course, he really *should not* stop trying to interest people in his work, but it is not hard to see why he *does* stop. The philosopher has a responsibility, even as the scientist has, and he dare not run away from it.

To explain what is the philosopher's responsibility to mankind is the same as telling what philosophy is and why it should be studied.

The philosopher himself knows the answer to these questions, but he finds it hard to explain to someone else, because philosophy is something personal and private, like a person's dreams and hopes and ambitions. Only the shallow-minded person wears his heart on his sleeve, and only the shallow-minded philosopher shouts his philosophizings from the housetops. The philosopher demands a reason for speaking his thoughts. If people approach him with the honest desire to learn what he has discovered, then he will try to explain. The philosopher needs above all a sympathetic and docile listener. Note the words I use. Sympathy means suffering or experiencing with another; and docility means willingness to learn. That is why Plato said: "It is only by long association with the best minds and a shared life that a light begins to dawn upon the soul and reveal the hidden truths."

But what does the philosopher talk about, once you get him to speak to you? About very commonplace things and very simple things. He may, for example, talk about life and about death, or he may discuss truth and goodness and beauty, or he may prefer to speak on thinking and willing and being happy. He may talk about the stars or about animals and flowers. But most frequently he talks merely about ideas. Now, all of these topics are very simple, but the philosopher has a way of digging deep into things. This is very well shown by the story of a little boy whose father was a philosopher. The little boy asked his mother about something one day and she said, "Wait until daddy comes home. He will explain it to you." And the little boy then said, "But, mother, I don't want to know that much about it."

The philosopher is not especially interested in *this* thing or *that* thing. He is interested in everything in general. He aims to give a reasoned account or explanation of the *whole* of reality. Other branches of learning deal with particular phases and special aspects of reality. The doctor studies the human body and its ailments and their cures. The lawyer concentrates on the study of law. The astronomer studies the stars. The philosopher, however, has for his specialty the universe. His aim, as the poet has said, is to "see life steadily and see it whole."

There is an ancient story about three blind men and an elephant that gives something of an example of the difference between philosophy and the other sciences. The three blind men were standing begging by the roadside one day when a procession was passing by. An elephant stopped right in front of them and they proceeded to examine it, for, being blind, they did not know what an elephant was like. One of the three happened to lay his hand on the elephant's side and, after feeling carefully all around, he said, "This thing is like a wall." Another had in the meantime taken hold of the elephant's leg and accordingly he disagreed with the first man, saying, "This thing in no way resembles a wall, but is without doubt very much like the trunk of a tree." But the third blind man, who had happened to grasp the elephant's tail, flatly contradicted both of the others. "You must

have lost your senses," he said. "This thing has not the slightest resemblance to either a wall or a tree trunk, but is without doubt exactly like a rope." And so the three blind men kept on arguing about the elephant, each calling the others harsh names because they did not agree with him.

The fact of the matter is that each of them was right as far as he went. They all made their mistake when they tried to talk about the whole elephant in terms of the single part which they had examined. Some scientists make a similar mistake when they talk on subjects that belong to philosophy. They find it hard to understand what the philosopher is trying to do, and thus they become exasperated with him for trying to treat the whole of reality when they themselves find it hard to treat exhaustively of a single part or aspect. They do not perceive that the philosopher is trying to understand the universe in much the same way as people who are *not blind* try to know an elephant, while the scientists themselves are trying to understand only a single phase or part of reality in something of the manner in which the *blind* men understood the elephant. If we wanted to say the same thing about the philosopher in a different way, we might say that he is searching for a point of view. Just as the artist must have a point of sight when he makes a drawing, so also the philosopher must have a point of view when he makes his word picture of the universe. The point of view which the philosopher has is his philosophy. Now, obviously there can be several points of view. One man can say God started the world, and another can say the world always existed. Some person might even claim that the world began by evolution, but that person would merely tell the process (the "how") and not *what* began it. So the third person would not be talking about the same thing as the other two. Yet even without him we have two different points of view and we dealt with only one question. That is how there can be many different philosophies. They are different because they give different answers to the questions of philosophy.

The problems which form the subject matter of philosophy are so vital that no thinking person could hold himself indifferent to them. No one who has ever stood by an open grave to echo the poet's, "Hail forevermore, my brother, and forevermore farewell," could pronounce himself indifferent as to whether death ends all. No one who has ever loved life could count it idle to ask if there be a God of life. No one who has tasted sorrow could be unmoved by the blessed prospect of a land where suffering should have passed away. No one whose human heart longs for happiness could count it idle to ask, Will this desire ever be fulfilled? The questions which philosophy sets itself to answer are indeed vital questions.

In answer, there have been many different systems of philosophy developed during the long course of over twenty-five hundred years since Thales, the first philosopher, started the philosophic ball rolling with his statement that "all things are made of water." Scepticism, atheism, cynicism, deism, Stoicism, Epicureanism are but a few of the

"isms" that have been placed as milestones to mark the efforts men have made to pierce the veil of nature's secrecies, in the hope of understanding better both themselves and the universe about them. And still the "isms" multiply. Our own age has added more than its fair share to the total. Idealism, utilitarianism, positivism, behaviorism, determinism, pragmatism are but a few of the solutions which modern philosophers have proffered to the perennial problems of philosophy.

With so many different philosophies to choose from, each one insisting that it is correct and that all the others are wrong, it becomes very difficult for a person to know which one to study. A person might decide to go about sampling all of them, but before he went very far he would find that it takes a long time to learn any one of them well, and hence he has not enough time to do much sampling. Besides, some philosophies are not very good for living. If a philosophy tells me that I cannot know anything, then the philosophy is no good to me, because I cannot know *it*. Only those philosophies which make it possible for me to live according to them are worth studying. Men are not looking for a philosophy which is only a plaything. They need something that is practical, something they can use every day of their lives.

In the American Catholic Philosophical Association we follow the plan of emphasizing one system of philosophy. The philosophy selected is an old one which has been tried for many centuries and has been found to be intensely practical. It was started by Aristotle, who was the teacher of Alexander the Great. It was revised twice since then, once in the Middle Ages, when Christian thinkers had discovered so many new facts which Aristotle had not known that a revision was necessary. This revision or synthesis of philosophy was the work for the most part of the gigantic intellect of a single man, St. Thomas Aquinas, who lived in the thirteenth century. The second revision took place in recent times. It was made and is still being made because of the great advance of science and the enormous amount of scientific data that have been gathered since the time of the Renaissance. The relation between the sciences and philosophy is still so important that this year it is the general subject of our philosophical convention.

This twice revised system of philosophy is commonly referred to as Scholastic philosophy because it was developed for the most part by the Scholastics or scholars of the Middle Ages. Its modern adherents are frequently called Neo-Scholastics. The name Thomism is also used of this system. It is derived from the name of the greatest exponent of Scholasticism, St. Thomas Aquinas.

Scholastic philosophers are somewhat unique among present-day philosophers. They still believe in truth, in reality, in God, in the power of human reason to know real things, in an immortal soul, an after life, and the power of man to guide his own destiny. Oddly enough, they base their belief in these fundamental verities on the authority of reason alone. They claim to be able to *prove* the truth of these fundamentals. Other modern philosophers, though they

started out in the seventeenth century with an unbounded confidence in the power of reason, have ended by declaring the bankruptcy of reason and reason's inability to offer any guidance to man in the really important problems of life. Outside of Scholasticism there seems to be nothing but intellectual chaos and despair.

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Law in Philosophy and Science

(STATION WGAR)

The annual meeting of the American Catholic Philosophical Association, which is being held today and tomorrow at the Cleveland Hotel, is having for its general theme of discussion, "Philosophy of the Sciences." The Association is a group composed chiefly of teachers and students, though, of course, open to any others who may be interested, who accept in a general way the viewpoint of Neo-Scholasticism in the field of philosophy. Scholasticism generally is that perennial philosophy or ultimate outlook on life which began in the fourth century B. C. with the views of the greatest philosopher of antiquity, Aristotle, which was organized and enhanced by the thought of the greatest philosopher of the Middle Ages, Thomas Aquinas, and which continues today under the title of New or Neo-Scholasticism. It is not, of course, a theological system, though it happens to be the philosophic outlook of the majority of Catholic thinkers at the present time. Being a philosophy, Neo-Scholasticism uses human reason alone to come to such important ultimate conclusions as the existence of a First Cause or Personal God, the spirituality and immortality of the human soul, the freedom of the will, the existence of a natural moral law for the governing of human life, and many other conclusions which ramify into every corner of human existence. Hence, philosophy does make a difference to every man, because man, as a rational animal, of necessity has ultimate reasons for his actions, whether he thinks them out for himself very clearly or not. Philosophies simply attempt to present these various attitudes towards life and its problems in a clearer, more organized manner.

I shall attempt in these few moments to exemplify this view of philosophy and at the same time to convey a little of the spirit of this meeting of philosophers now taking place in your community by considering the notion of law as viewed by the scientist whose business it is, generally, to seek more immediate causes of things, and law, as the philosopher considers it. Obviously, the two attitudes are in no sense opposed or contradictory. Rather, they are complementary. Broadly speaking, it may be said that the scientist seeks to describe how things take place, to state as exactly as possible the conditions under which they will regularly occur. We note that he confidently presumes a certain uniformity of action in nature, which he justifies

in view of his experience. Hence, he states, for example, the law of gravitation: Every body attracts every other body directly as the product of their masses and inversely as the square of the distance between them. While the law states what has occurred in the past and is occurring, it is assumed that it will uniformly continue to occur. Thus arises the important bi-product of scientific law, namely, predictability, the foretelling of the future from a knowledge of the past—with all that such prediction can mean in many instances in the way of prevention or control.

On this point of regularity of action of things a very interesting change of attitude has taken place in the field of science with the turn of this present century. Nineteenth century science considered this regularity as absolutely determined, permitting of no exceptions. Even the freedom of a single human act was generally denied. Complete fixity, absolute determination was the picture which science presented. Today something nearer the other extreme of widespread departure from fixity is expressed in such a view as Heisenberg's Law of Indeterminacy. Not only is the human will declared to be free, but all nature, even inanimate things, fail on occasion to act in accordance with what we might expect—as witness the unpredictable jumps of the electrons, those tiny negative charges of electricity which revolve like planets around the central nucleus of the atom of matter. Thus again does science as well as other mental disciplines exemplify the tendency of the human mind to swing, pendulum-like, between extremes. Perhaps, however, the supposed irregularity merely represents a lack of exact knowledge of conditions.

Approaching this ever increasing body of scientific law, the philosopher who is true to his calling to seek more ultimate explanations asks why these regularities which the scientist states in his scientific laws. The scientist may quite legitimately consider this question to be outside his field, but the philosopher cannot neglect it. If he did, he would have no real reason for existing. It is true there have been philosophers who have been content to assume the "vocation of an echo," in merely repeating the findings of science and who have thus merited the triumphant condemnation of at least one prominent American scientist, who declared some time ago that philosophy was dead. Certainly Neo-Scholasticism does not accept such a role of repetition, and hence it insists that it is very much alive.

The philosophic definition of law given by the Neo-Scholastic aims precisely at an explanation of such regularity as the scientific law indicates. Hence a philosopher like Thomas Aquinas defines law as a rule or ordinance of right reason promulgated for the common good by the one who has charge of the thing or things concerned. For the philosopher the scientist's observed regularity really is the effect of the law, strictly speaking, rather than the law itself. More properly the law is that inner inclination, or nisus, or appetency of things, their nature we popularly call it, which directs them along a more or less definite line of action, very evidently towards some preconceived end which is the good of the thing itself, a *bonum sibi*, or a

means towards the securing the good of another, *bonum alteri*, or the general good of the whole—an evident cosmos or ordered universe rather than a chaos.

You will note we have stated that the inclination of things is towards a preconceived end, a finality that is clearly intended at the very outset of the action of things and must, therefore, have been in some intelligent mind before the thing began to act. Obviously, things did not give themselves their inclinations or natures, and being without the power themselves to conceive the ends towards which they move, reason compels us to assume that such preconception is in the mind of some being outside themselves. This Being we call the Great Designer, or First Cause, or God, who is the Being who has charge of things as required in our philosophic definitions of law, the Being who thus promulgates what we call the natural law by giving things their tendencies towards ends, their natures. Be it noted that man himself forms no exception to the other orders of nature in the evidence which he also gives of a nisus, or inclination, towards an end ordained for him. There is a law of his nature which is given to him. The difference in his case, of course, lies in the fact that, being rational, he can be fully conscious of his ultimate end, and, being free, he can reject it. It is for this reason that we call the law of his nature the moral law. In every respect it fulfills the philosophical definition of law.

Finally, I believe that much of the so-called conflict between religion and science, which might more accurately be termed misunderstanding, may lie in the endowing of scientific law with an absoluteness which exact knowledge of the facts does not warrant. Thus, unconsciously even, certain scientists, more by the subtle implication of silence than open expression, have conveyed the notion that physical laws are so fixed and absolute that any exception to them would be impossible. Hence, they would rule out any such exception to the regular order attributed by the theologian to divine intervention, which the theologian calls a miracle, and which in Christianity is offered as proof of Christianity's divine origin. Here it is that the philosopher corrects the claimed or implied absolute necessity of physical law by pointing out that a more ultimate consideration of such laws warrants no such claim in view of the fact that the regularity of actions in the natures of things is contingent upon the being that imposed that nature or inclination upon them. Hence the necessity is not absolute but physical or hypothetical—that is, it always presumes the concurrence of First Cause in the action of all other causes. Therefore, this Supreme Intelligence may for good reason prevent, or change, or decrease, or increase the regular action of things on certain occasions. Philosophically, in a word, there is no rational objection to the possibility of a miracle as an exception to physical law. If it occurs, it may be subjected to the same tests as any other historical event. To the scientist, then, the philosopher would say that if science will claim no more for its laws than facts or reason warrant, much of this so-called conflict with religion will disappear. This

is of great importance in an age which is inclined to worship science as a new Messiah and to belittle the contributions of the theologian to a more intelligent view of life.

CHARLES A. HART,
Secretary of the Association.

The Catholic University of America,
Washington, D. C.

Philosophy and Science.

(STATION WHK)

Curiosity is not limited to the cat. Indeed, in man we find a very much higher degree of that same quality. Properly directed by his intelligence, it has proved itself an invaluable asset, as it has frequently been the driving power behind many of man's most notable achievements. He has searched the heavens in an attempt to understand the message of their vastness; he has tried to penetrate into those dim recesses, far beyond the reach of his unaided eyes, and has wrested from infinitesimal nothingness the story that has been for centuries so carefully guarded. The telescope, the microscope, have been but instruments in his hands, in his never wearying search. He has probed the mysteries of the workings of the very mind of man; to him the brilliant, meteoric rise of genius, as well as the devious by-paths of the clouded mentality of the abnormal, are gradually manifesting something of their reason. The very mysteries of life and death are fast ceasing to be mysteries. The penetrating search of man has been universal. He has catalogued; he has classified; he has formed theories, only to have new facts, discovered later, force him to abandon what he once unhesitatingly accepted. And so the quest for knowledge continues, baffling ever, but never halting man, entirely, in his search. The sum total of that knowledge he calls science.

Yet man's curiosity drives him further. The tiny child is constantly asking the same question that man's maturer mind is asking, the perennial "Why." His constant search is only the attempt to find that answer. We are not satisfied with knowing. Facts are marshalled in orderly array; what seem to be facts are placed in definite arrangement; yet back of all those facts and seeming facts there is always seen to be some further reason, some explanation that physical instruments cannot measure. The very facts that have been discovered challenge the mind to guess the answer. A theory is advanced, only to have that same curiosity hurl back the question once again, "Why?" Each new answer given raises anew the self-same "Why," till the man of science is eventually forced to seek an explanation outside of the field of science in which he is working. That ultimate answer to which no further "Why" can be raised, or which indirectly answers the very question it has directly raised, is no longer science but the field of philosophy.

Is it any wonder, then, that a man who is trained to the last degree

of efficiency in the use and construction of physical instruments sometimes finds himself balked in an attempted ultimate explanation? Is it any wonder that, though the verdict of science is absolute, the verdict of the philosopher within the scientist is hesitant and often faulty? In his science he is guided by rules and norms which he cannot overlook. Were he to attempt the solution of a problem only to find that his solution involved the acceptance of some truth contradicting what he knew to be true, that very fact would force the abandonment of his solution as tenable. Were he faced with the need of admitting either that two times two did not equal four or of abandoning a theory which necessarily demanded such an admission, the known fact, not the theory, would prevail. Unfortunately, many modern scientists, experts without a doubt in their own field, have been groping in the darkness when it came to the formulation of a philosophy.

Antiquity produced a man whom we today still recognize as one gifted with the keenest intelligence that it has ever been given the mind of man to possess. That man was Aristotle. Pupil of Plato, himself the pupil of Socrates, Aristotle was the culmination of Athenian greatness. It was in the main his philosophy that was adopted by the Catholic Church, after it had been purified of the occasional error that even the greatest human minds were capable of. Guided by infallible truth, by the revealed word of God Himself, who not only knew the answer but could not possibly mislead man in giving that answer, the Catholic Church has always felt that there could be no truer philosophy than the one that she embraced. This does not mean that her philosophy is identified with religion, but it does mean that she has a revealed religion as a definite marker, limiting man's possible aberrations. It means that she knows with certainty, not the answer to all questions by any manner of means, but that in some few cases she definitely knows with certainty the wrong answer. She, as it were, has the answer book to a mathematical text; she can check the conclusion of the philosopher against the known answer, where that answer has been given.

At present the city of Cleveland has an opportunity to come into personal contact with that much discussed philosophy of the Catholic Church. Not only that, but the city has occasion to contact that philosophy directly in the matter where most apparent conflict rules, in the field of science. Today and tomorrow the Eleventh Annual Convention of the Catholic Philosophical Association is holding its meetings at the Hotel Cleveland. John Carroll University is sponsor and host to the convention. All its meetings are open to the public. This morning, in the general discussions on "The Philosophy of the Sciences", the fields of Physics and Chemistry were explored. Each formal paper was followed by a most interesting discussion of a half hour or more. This afternoon, at two intriguing round table discussions, questions from the fields of Metaphysics and Social Ethics were ardently debated. Tomorrow morning at nine o'clock, problems from the fields of Chemistry, Biology and Psychology will hold the

center of the stage. In the afternoon, at three o'clock, two more round table discussions will be entered into, one in the field of Epistemology, the other in that of Aesthetics.

The Catholic Philosophical Association extends a most cordial invitation to any and all in the vicinity who are interested, to be present. John Carroll University feels honored in being host to such a gathering of notables, each speaker eminent in his own chosen field, and adds her voice in welcoming visitors to the convention. There will be no formality to your visit. If you are interested in the fields of science you will be assured of finding interest in the philosophy that lies behind those subjects. You may not always agree, but at least you will find that there is much to respect in the opinions that will be set forth. You will be made to realize that the Catholic Church is by no means the enemy of science that she is portrayed to be. True science has always been genuinely welcomed by her. She is an anxious spectator to all the technical development of modern science. Truth, she knows, can never contradict truth; and consequently she is ever unafraid. She does not fear facts that are genuinely attested to be facts; her philosophy is capable of explaining them all. She does reject the frequently unwarranted assumptions of scientists, who, in making those assumptions, cease for the moment to be scientists to enter a field in which they have not been trained as adequately as they have been in their own chosen fields of science. Not science but false philosophy behind science, or more accurately behind the scientist,—this is what the Church has condemned and will condemn in no uncertain language. She knows that to be genuinely scientific is the same as being genuinely religious. The greatest scientific minds of the ages have been true believers, proving, if there were need of proof, that science and religion are not only not incompatible, but that genuine science leads back to God, the ultimate source of all truth, whether it be in the field of religion, of philosophy, or of science.

I have said that the Catholic Church welcomes the findings of genuine science, and the reason is obvious. Each morsel of knowledge wrested from the unwilling atom or the most distant star is but another proof to her of the infinity of the Creator of everything. The very magnitude of the visible creation causes us to stand in awe of its proportions; yet it is difficult to say whether we are more astounded by a comprehensive view of its inestimable greatness, or, by the fact of the absolute perfection and order of its infinitesimal constituents. The telescope has revealed the former, the microscope the latter, and of the results of each, I feel inclined to say that, while we cannot but marvel at the vastness of the world, we are more awed at the perfection and all but infinite vastness of the infinitesimal. To have produced the enormous is partially intelligible; to have been able to reproduce the enormous on a microscopic scale is blindingly unintelligible. We feel proud of the achievements of science in discovering, and rightly so; what, then, of the intelligence that could conceive and of the power that could produce what it had conceived? Man,

proud product of the ages that have preceded him, using the knowledge of millions of his fellow men in aiding him—man glories in his accomplishments. We today are the result of the addition of all those who have preceded us, as well as of our own efforts. The sum total of all our efforts is but the dimly perceived behind the veils of almost impenetrable obscurity. We are but groping feebly in a region where the Creator of everything not only did not grope, but eons of years before man arrived on the scene, had conceived, and conceiving, willed the very existence of that which we are only now beginning remotely to rediscover. Man in his littleness is so great, what of God in His Immensity? The Church cannot fear that which will reveal the God of Science to be the God of Revelation.

L. H. OTTING.

John Carroll University,
Cleveland, Ohio.

PROCEEDINGS OF THE AMERICAN CATHOLIC PHILOSOPHICAL ASSOCIATION

MINUTES OF MEETING OF DECEMBER 30-31, 1935.

The American Catholic Philosophical Association met at Hotel Cleveland, Cleveland, Ohio, as guests of the John Carroll University, on Monday, December 30, 1935, at 9:30 a. m., Dr. John O. Riedl presiding. The delegates were welcomed on behalf of the University by the Reverend Leonard H. Otting, S. J., acting in place of the President, who expressed the formal welcome of the University at the Annual Dinner.

The general subject of the meeting was "Philosophy of the Sciences." The following papers were presented: "The Frontiers of Philosophy and the Limitations of Science," by Dr. Anton C. Pegis, of Marquette University; "Contingency in Physical Laws," by the Reverend James A. McWilliams, S. J., St. Louis University; "Matter and Form and Recent Views of the Constitution of Matter" by the Reverend William H. Kane, O. P., of the Dominican House of Studies, River Forest, Illinois.

President Riedl announced a meeting of the Executive Council to take place at a luncheon in the Terrace Dining Room of the Cleveland Hotel at 12:45 p. m.

The following committees were appointed:

Auditing Committee

John F. Cronin Joseph Schabert William J. O'Meara

Nominating Committee

Francis E. McMahon Joseph C. Fenton Anton C. Pegis

AFTERNOON SESSION

The first afternoon session met in two sections, each section being called to order at 2:30 p. m. Section A, "General Metaphysics," meeting in the Ball Room, was presided over by Dr. Harry McNeill, of Fordham University. The leaders in the discussion were Dr. Francis E. McMahon, of the University of Notre Dame, and the Reverend Joseph E. Fenton, of St. Bernard's Seminary, Rochester, New York. This section had for its problem: "Should the science of metaphysics treat of all the categories or only those which are coextensive with created reality." Dr. Fenton presented the first view and Dr. McMahon the second.

Section B, devoted to "Social Ethics," meeting in the Red Room, was presided over by the Reverend Avitus E. Lyons, of Toledo, Ohio, and had for its problem the question "Can Collective Bargaining be Ethically Enforced?" Leaders for the discussion were Very Reverend John W. R. Maguire, C. S. V., of St. Viator's College, Bourbonnais, Illinois, who spoke on the affirmative, and the Right Reverend James

M. McDonough, of St. Mary's Seminary, Cleveland, Ohio, who presented the negative side of the question.

The Annual Dinner of the Association was held at 7:00 p. m. in the Ball Room of the Cleveland Hotel, following a reception for the members. The Reverend John J. Toohey, S. J., of Georgetown University, Vice President, presided. Formal greetings of John Carroll University were presented by Very Reverend Benedict J. Rodman, S. J., President of the University. The Presidential Address, "Philosophy and the Social Sciences," was delivered by Dr. John O. Riedl, of Marquette University. In recognition of the fact that the Association had completed ten years of existence, an address, "A Decade of Association," was presented by His Excellency, The Most Reverend James H. Ryan, Bishop of Omaha, one of the founders of the Association, and for the past nine years co-editor of the journal of the Association, *The New Scholasticism.* The final address of the evening was presented by His Excellency, The Most Reverend Joseph Schrembs, Bishop of Cleveland, who had for his speech, "The Church and Philosophy."

Tuesday Morning

The following papers were presented at the second morning session of the meeting: "Emergent Evolution of Morgan and Smuts," by the Reverend Norbert C. Hoff, of the University of Notre Dame; "Some Prepossessions of Modern Psychology," by the Reverend Peter Groen, of St. Mary's Seminary, Cleveland, Ohio; "Philosophy and Sociology," by Very Reverend Ignatius Smith, O. P., of The Catholic University of America.

Afternoon Session

The general business meeting of the Association was held at 1:45 p. m. in the Ball Room.

The report of the Auditing Committee was made by the Reverend John F. Cronin. It was moved and seconded that this report be accepted.

The report of the Nominating Committee was made by Dr. Francis E. McMahon, as follows:

For President	John J. Toohey
For Vice President	William T. Dillon
For Secretary-Treasurer	Charles A. Hart

Executive Council

For One Year	James H. Ryan
For One Year	Francis E. McMahon
For Two Years	Louis J. A. Mercier
For Two Years	John E. Burns
For Three Years	James A. McWilliams
For Three Years	Ignatius Smith

For Pacific Coast Regional Conference

Chairman	Charles R. Baschab

For Southern Regional Conference

Chairman . . . . . Edward F. Murphy

It was moved and seconded that the report of the Nominating Committee be accepted, and that the Secretary be instructed to cast a unanimous ballot.

The report of the Secretary-Treasurer was read and approved. (This report is published under the heading "Report of the Secretary-Treasurer," immediately following these minutes.)

The Secretary reported that he had carried on a continuous campaign for new members and had been successful in adding 61 memberships during the year.

The reports of the Standing Committees on Research and on Radio and Publicity were presented to the meeting and approved. (These reports are published under the heading "Reports of Standing Committees.")

The Secretary requested the appointment of a Committee on Constitution, which should consider various proposals for amendments to the constitution, to be considered at the next annual meeting. The following members were appointed:

John F. McCormick, Charles A. Hart, Brendan F. Brown

The Reverend Gerald B. Phelan offered a motion, which was seconded and approved, expressing the appreciation of the Association for the splendid hospitality of John Carroll University, particularly for the excellent work of the Reverend Leonard H. Otting, S. J., Chairman-Secretary of the Local Committee on Arrangements, and Mr. Eugene R. Mittinger, Director of Publicity at the University, in securing excellent local publicity prior to and during the time of the meeting.

The motion also included expression of appreciation of the hospitality of Hotel Cleveland, particularly of Mr. Louis H. Alguire, Sales Manager, and of the services of Stations WGAR, WTAM, and WHK, which were extended to the President and Secretary of the Association and the local Chairman for broadcasts during the time of the meeting of the Association.

It was moved, seconded, and approved that the Association express its appreciation of the work of the President during the year, and of the Secretary-Treasurer during the past several years.

The President announced the appointment of the Right Reverend Edward A. Pace, the Reverend Francis Augustine Walsh, and the Reverend John K. Ryan, all of The Catholic University of America, as Editors of *The New Scholasticism*. He likewise announced the resignation of His Excellency, the Most Reverend James H. Ryan, as co-editor of the journal during the past nine years. He also announced the subject, place and date for the next annual meeting as indicated in the minutes of the Executive Council, as well as the standing committees to be in charge of the round table discussions.

It was moved by the Reverend John J. Toohey, S. J., and seconded, that the Association send the greetings and best wishes of its mem-

bers to His Excellency, Bishop Ryan, on the occasion of his appointment to the See of Omaha; likewise the deep appreciation of the valuable services which His Excellency had rendered to the Association since its foundation.

The business meeting adjourned at 3:00 p. m. for a continuation of the round table discussions in the fields of Epistemology and Aesthetics. The "Epistemology" section (C) was held in the Ball Room with the Reverend Cyprian Emanuel, O. F. M., as Chairman, and the leaders, the Reverend John J. Toohey, S. J., of Georgetown University, and the Reverend John F. Cronin, of St. Mary's Seminary. Dr. Toohey had for his problem "Influence of Structure of Language Upon Philosophical and Scientific Theory," and Dr. Cronin, "Cardinal Newman's Theory of Knowledge."

Section D in "Aesthetics" met in the Empire Room. The leaders were Dr. Mortimer J. Adler, of the Law School of the University of Chicago, and the Reverend Gerald B. Phelan, The Institute of Mediæval Studies, Toronto. The problem discussed by Dr. Adler was "Imitation and Creation." Dr. Phelan discussed "Beauty in Nature and in Art."

The sections adjourned at 5:15 p. m.

Respectfully submitted,

CHARLES A. HART,
Secretary.

REPORT OF THE SECRETARY-TREASURER

AMERICAN CATHOLIC PHILOSOPHICAL ASSOCIATION

The Tenth Annual Meeting of the American Catholic Philosophical Association was held at DePaul University Graduate School, Chicago, Illinois, December 27 and 28, 1934. The proceedings were published in a volume entitled *Proceedings of the Tenth Annual Meeting* and mailed to all members.

The membership of the Association, as of December 1, 1935, is as follows:

Life	11
Institutional	98
Constituent	167
Associate	137
Student	23
Foreign	12

The New Scholasticism has been issued in quarterly numbers during the year, constituting Volume IX of 374 pages. The distribution was as follows:

Membership in the Association	448
Subscribers to *The New Scholasticism*	116
Special Exchange List (C. U. Library)	66
Exchanges	50
Complimentary	17

The financial report, approved by your Committee of Auditors, is as follows:

Receipts

Balance on Hand—December 1, 1934		$1,564.91
Membership dues in Association	$2,289.80	
Subscriptions to *The New Scholasticism*	855.03	
Royalties on *Aspects of The New Scholastic Philosophy*	9.18	
Royalties on *Philosophy of Society*	52.75	
Annual Dinner	356.00	
Check not cashed	5.00	3,567.76
Total Receipts		$5,132.67

Expenditures

Printing *The New Scholasticism*	$1,458.10	
Printing *Annual Proceedings*	392.14	
Printing (Miscellaneous)	40.95	
Stenographic Services	300.00	
Annual Dinner	352.80	
Miscellaneous Expense	90.88	
Check returned by Bank	4.00	
Federal Tax on Checks	.20	
Service Charge of Bank	.40	
Total Expenditures		$2,639.47
Balance on Hand—December 1, 1935		$2,493.20

The Secretary-Treasurer acknowledges the free office and file space from The Catholic University of America.

The Secretary extended invitations to various members during January and February to read papers at the Eleventh Annual Meeting. Practically all acceptances were in hand prior to May 1, 1935.

On December 1, 1935, the program was sent to all members, together with a request for names of persons or institutions which might be interested in membership, as well as suggestions for the subject of the 1936 meeting, and suggestions as to the publications of the Association. A fairly good response was received. The Secretary would greatly appreciate this kind of assistance from the individual members, as the most valuable source of increasing membership. Copies of the program were also sent to British and American philosophical reviews, with request for comment, and to the members of the Department of Philosophy in Western Reserve University, at Cleveland.

Letters of invitation to membership were sent during the year to all colleges and seminaries not on the list of the Association; 177 letters were sent to persons registered at the DePaul meeting who were not on our list, from which 10 applications for membership were

received; 66 were sent to graduate students of philosophy with the result that 5 applications were received; and letters were sent to 279 professors of law in various Catholic law schools, in connection with the Committee on Philosophy of Law, from which 8 applications for membership were received. In this way, the Secretary has carried on a continuous campaign for increasing membership during the year, with gratifying results. The total number of applications received during the year, and accepted by the Executive Council at its meeting yesterday, was 62.

The Secretary was successful in arranging one sectional meeting at San Francisco under the able chairmanship of the Reverend Charles R. Baschab, Professor of Philosophy at the Dominican College of San Rafael. This meeting was held at the Fairmont Hotel, San Francisco, October 25 and 26, 1935. The program was as follows:

General Topic

SCHOLASTIC ETHICS AND MODERN SOCIETY

Friday, October 25, 1935

The meeting opened with a Solemn Mass at St. Mary's Cathedral, His Excellency Most Rev. John J. Mitty presiding and Rev. Charles R. Baschab being celebrant.

FAIRMONT HOTEL

10:30 A. M., Morning Session

Rt. Rev. Msgr. Charles A. Ramm, D.D., LL.D., Rector, St. Mary's Cathedral, presided.

Paper: "Ethics and Economies," Rev. Cyril R. Kavanaugh, S. J., Professor of Ethics, University of Santa Clara.

Discussion: Rev. Joseph P. Mulkern, Director of Catholic Charities, Alameda County.

Mr. David Newberry.

2:00 P. M., Afternoon Session

Mr. Harold R. McKinnon, A.B., LL.B., presided.

PAPER: "Ethics and the State," Dr. Kurt F. Reinhardt, Associate Professor of Germanic Languages, Stanford University.

DISCUSSION: Rev. James D. Cronin, S.T.D. Rev. Hubert Flynn, S.J., Professor of Philosophy, University of San Francisco.

PAPER: "Ethics and Education," Professor James L. Hagerty, M.A., LL.D., Dean of the School of Arts and Letters, and Professor of Philosophy, St. Mary's College.

DISCUSSION: Rev. James J. McHugh, M.A., Member of the School Board of the Parochial Schools of the Archdiocese of San Francisco. Rev. Lyman A. Fenn, S.S., D.D., President, St. Joseph's College.

8:15 P. M., Evening Session

Honorable Sylvester Andriano, A.B., LL.,B., President, San Francisco Academy, presided.

ADDRESS: "The Vitality of Scholastic Ethics," Rev. Thomas F. Burke, C.S.P.

PAPER: "Ethics and the Family," Rev. B. M. Blank, O.P., S.T.Lr., S.T.D., Professor of Philosophy at College of St. Albert the Great, and Dominican College, San Rafael.

DISCUSSION: Rev. Louis J. O'Hara, C.S.P., Director, Newman Hall, University of California. Rev. John M. Byrne.

Saturday, October 26, 1935

10:00 A. M., Morning Session

Rev. Robert I. Falvey presided.

PAPER: "Ethics and Art," Dr. Kurt F. Reinhardt, Associate Professor in Germanic Languages, Stanford University.

DISCUSSION: Rev. John E. Meehan, M.A. Professor James L. Hagerty, M.A., LL.D., Dean of the School of Arts and Letters and Professor of Philosophy, St. Mary's College.

PAPER: "Ethics and Religion," Rev. Charles R. Baschab, Ph.D., Professor of Philosophy, Dominican College of San Rafael.

DISCUSSION: Rev. Francis L. Sheerin, S.J., S.T.D., Professor of Dogmatic Theology, Alma College.

12:30 P. M., Luncheon

Rev. Charles R. Baschab presided.

Guest of Honor: His Excellency Most Reverend John J. Mitty, D.D., Archbishop of San Francisco.

ADDRESS: "The Sleeping Beauty," Brother Leo, F.S.D., L.H.D., LL.D., Professor of Literature, St. Mary's College.

Address by the Most Reverend Archbishop Mitty.

For several reasons the Southern Sectional Conference was unable to have a meeting this year, but plans are being made to have one in the course of the coming year. Very Reverend Edward F. Murphy, S.S.J., President of Xavier University, New Orleans, is Chairman of this section.

The Secretary sent out a number of news releases to all Catholic papers during the year, particularly prior to the Annual Meeting, through the National Catholic Welfare Conference News Service, the Bureau of Public Relations of The Catholic University of America, and the Bureau of Public Relations of John Carroll University. Special notices were also secured in the local Cleveland papers through the able assistance of Mr. Eugene R. Mittinger, Director of the Bureau of Public Relations of John Carroll University, and the Reverend Leonard H. Otting, S.J., also of John Carroll University, who was Chairman of the Local Committee on Arrangements for the Eleventh Annual Meeting. A preliminary campaign of publicity was conducted before the meeting. Father Otting was assisted by the following members of the Local Committee:

Honorary Chairman, Most Rev. Joseph Schrembs

Rev. Cyprian Emanuel	Rev. Joseph J. Mullen
Rev. Peter Groen	Rev. William J. Murphy
Right Rev. John R. Hagan	Rev. William L. Newton
Mr. Eugene R. Mittinger	Mr. John Smith

Dr. Louis Sommers

Through the assistance of Mr. Mittinger, the Secretary was able to arrange several short radio broadcasts on Stations WTAM, WHK, and WGAR, the President of the Association speaking on the first named station on Sunday, December 29, at 1:30 p. m., on the subject, "Everyman's Philosophy;" the Reverend Leonard H. Otting, S.J., of John Carroll University, on WHK on Monday, December 30, at 4:00 p. m., and the Secretary of the Association on WGAR on Monday, at 6:30 p. m., on the subject "Law in Science and in Philosophy."

Respectfully submitted,

CHARLES A. HART,
Secretary-Treasurer.

REPORTS OF STANDING COMMITTEES

Report of Committee on Philosophy of Law

The first meeting of your Committee on Philosophy of Law took place at the Loyola University School of Law, Chicago, on September 14, 1935. The following members were present: Rev. Linus Lilly, S.J., Rev. Dr. Charles A. Hart, Professor Fitzgerald and Dr. Brendan F. Brown. Father Noonan, S.J., of the Loyola Law School, was present; also Mr. James J. Kearney, of the Chicago Bar. After an extended discussion, in which the Committee unanimously agreed that the time was opportune for launching a movement to develop a Neo-Scholastic philosophy of law, and to work out means of applying it in the work of Catholic Law Schools, a fourfold plan was adopted, namely,

1. That mimeographed copies of the minutes of this meeting be sent to all teachers in Catholic Law Schools, and to all Catholic teachers in non-Catholic Law Schools, and to other teachers, besides the above, who might be favorable to the development of a Neo-Scholastic, or theophilosophical School of Jurisprudence.

2. That a communication be sent to those mentioned in the first motion asking for their opinions as to the idea of developing a Neo-Scholastic philosophy of law, and inquiring what, if anything, such teachers were doing in their respective classes to call attention to the relation of their courses in law to such a philosophy.

3. That the results of this communication be compiled and sent to all those mentioned in the first motion.

4. That the American Catholic Philosophical Association be petitioned to allow the Committee on the Philosophy of Law to organize a section made up of all those mentioned in the first motion, who would function as the "Philosophy of Law Section" of the Association.

The Committee has sent mimeographed copies of the minutes of

the meeting to all teachers in Catholic Law Schools and to others interested.

On October 19, 1935, the Committee sent a mimeographed letter to all teachers in Catholic Law Schools, and to others interested in the formulation of a Neo-Scholastic legal philosophy, explaining the willingness of the American Catholic Philosophical Association to cooperate with those striving to build up a Neo-Scholastic philosophy of law, and in which it invited teachers in Catholic law schools to membership in the Association.

On November 21, 1935, the Committee sent to such teachers mimeographed copies of excerpts from an article entitled "Catholic Law Schools," by Rev. E. L. Curran, Ph.D., appearing in *Truth*, March, 1933, which stressed the thought that unless Catholic law schools emphasize a distinctive jurisprudence there is little need for their continued existence. Five inquries were made, namely,

1. Should the faculty members of Law Schools which constitute parts of universities established by religious orders, or by clerics, obviously for the purpose of giving a specific type of education, undertake at the present time to develop and present, in some degree, a legal culture produced by relating law to the other social sciences under the influence of a Neo-Scholastic philosophy?

2. Should the courses in the undergraduate legal *curriculum*, such as contracts, torts, etc., be taught in "Catholic Law Schools" in exactly the same manner in which they are presented in "Non-Catholic Law Schools?"

3. If your answer is affirmative in the second question, why should "Catholic Law Schools" continue to exist?

4. If your answer is negative in the second question, what would you suggest by way of creating a distinction between the training given in a "Catholic Law School," as distinguished from a "Non-Catholic Law School"?

5. What, if anything, are you doing in the particular courses which you teach to give them a distinctive tone with reference to "Catholic Scholarship"? (An effort will be made to compile the data obtained from answers to this question.)

Thus far, eighteen replies have been received to the above questions. These replies indicate a very great interest, although there is a marked variation of opinion. The predominating view is that there is need at the present time of an effort to infuse Neo-Scholastic philosophy into the Catholic law school. Some are holding that such infusion is already taking place, thus disagreeing with Dr. Curran, by holding that there are "Catholic Law Schools." Others believe that hardly a begining has been made. Another opinion is that no attempt should be made to differentiate a "Catholic law school" from a "Non-Catholic law school." Representatives from the following institutions have replied: Marquette, Loyola (Chicago), Detroit, St. Joseph's College for Women, Tulane, The Catholic University of America, DePaul, Notre Dame, St. Mary of the Lake Seminary, San Francisco, Loyola (New Orleans).

Considerable progress has thus been made since the middle of September. The first two resolutions passed at the first meeting of the Committee have been carried out. In the very near future, the results of the survey will be compiled and distributed. It is hoped that there will eventually be sufficient interest to warrant the Committee to ask the Association to organize a permanent section on the Philosophy of Law.

Respectfully submitted,

BRENDAN F. BROWN, *Acting Chairman*,
TIMOTHY L. BOUSCAREN,
WALTER B. KENNEDY
LINUS LILLY,
WILLIAM T. DILLON
JOHN C. FITZGERALD
ADAM C. ELLIS,
CHARLES A. HART

Report of the Committee on Research

In the absence of the chairman, Reverend Charles C. Miltner, of Notre Dame University, Reverend Francis Walsh, a member of the Committee on Research, stated that the committee was not prepared to make any report.

Report of the Committee on Radio and Publicity

As Chairman of the Standing Committee on Radio and Publicity, appointed at the Tenth Annual Meeting, I desire to make the following report. The other members of the Committee are the Reverend John J. Toohey, S.J., Georgetown University, and Dr. Francis E. McMahon of the University of Notre Dame.

During the year the Committee contacted the various national networks and the National Advisory Committee on Radio in Education without obtaining any definite commitments from these sources. Thereafter the Committee contacted individual members in various localities who were asked to act as local chairmen of Sub-Committees on Radio to approach local stations with a view to securing brief periods for ten or twelve weeks, during which time the fundamentals of Neo-Scholastic Philosophy might be presented. At the present time a number of local Sub-Committees are at work on this assignment in the following centers: New York (Rev. Dr. William Dillon, sub-chairman); Washington (Rev. Dr. Charles A. Hart, sub-chairman); South Bend (Dr. Francis E. McMahon, sub-chairman); Milwaukee (Dr. John O. Riedl, sub-chairman); St. Paul, Minn. (Rev. Dr. Joseph Schabert, sub-chairman); New Orleans (Rev. Dr. Edward Murphy, sub-chairman); San Francisco (Rev. Dr. Charles R. Baschab, sub-chairman).

The Committee hopes during the coming year to be able to present a series of programs in at least a dozen different localities, the titles for the same to be suggested by the Committee and the treatment of

the subjects to be left to the local Sub-Committee. All programs are to be presented in the name of the American Catholic Philosophical Association.

Respectfully submitted,
CHARLES A. HART, *Chairman*
JOHN J. TOOHEY
FRANCIS E. MCMAHON

MINUTES OF MEETINGS OF EXECUTIVE COUNCIL

AMERICAN CATHOLIC PHILOSOPHICAL ASSOCIATION

There were two meetings of the Executive Council of the American Catholic Philosophical Association during the year 1935. The first meeting was held in the Terrace Dining Room of Hotel Cleveland, Cleveland, Ohio, on Monday, December 30, 1935, at 12:45 p. m. The following were present:

John O. Riedl	James H. Ryan
John J. Toohey	Francis E. McMahon
James A. McWilliams	Louis J. A. Mercier
Sister Jeanne Marie Bonnett	Charles A. Hart

John E. Burns had written to the Secretary asking to be excused.

The reading of the minutes of the last meeting was dispensed with inasmuch as they had been published in the 1934 *Proceedings*.

The general business of the meeting was the consideration of applications for membership and the appointment of Editors of *The New Scholasticism* in view of the resignation of His Excellency, the Most Reverend James H. Ryan, who had written to the President previous to the meeting presenting his resignation as co-editor.

The following applications were approved:

INSTITUTIONAL

College of St. Albert the Great, Oakland, Calif.
St. Mary's Seminary, North Paca St., Baltimore, Md.
The St. Paul Seminary, St. Paul, Minn.
University of Detroit Law School, Detroit, Mich.
West Baden College, West Baden, Ind.

CONSTITUENT AND ASSOCIATE

Dr. Mortimer J. Adler, University of Chicago, Chicago, Ill.
Rev. James Albert, 304 Sengstek St., Mobile, Ala.
Dr. Brendan F. Brown, The Catholic University of America, Washington, D. C.
Rev. George Bull, S.J., Fordham University, New York City .
Rev. Malachy Burns, O.S.B., St. Joseph's Abbey, St. Benedict, La.
Rev. William A. Carey, S.J., Weston College, Weston, Mass.
Prof. John W. Curran, DePaul University, Chicago, Ill.
Dr. Charles Dec. DeKoninck, 23 St. John St., Quebec, Canada.
Rev. Steward E. Dollard, S.J., St. Mary's College, St. Marys, Kansas.

Rev. John J. Doyle, St. Mary-of-the-Woods College, St. Mary-of-the-Woods, Ind.
Rev. Alexius M. Driscoll, O.P., Dominican House of Studies, River Forest, Ill.
Rev. Alphonse G. Eberle, St. Louis University, St. Louis, Mo.
Rev. Alphonse Elsbernd, S.V.D., St. Mary's Mission House, Techny, Ill.
Rev. Austin Fagothey, S.J., University of Santa Clara, Santa Clara, Calif.
Rev. Joseph C. Fenton, St. Bernard's Seminary, Rochester, N. Y.
Prof. John C. Fitzgerald, Loyola University, Chicago, Ill.
Mr. Henry E. Foley, 7 Summit St., Boston, Mass.
Mr. S. K. Hahn, 654 West Lake St., Chicago, Ill.
Rev. Basil Heiser, O. M. Conv., St. Anthony Novitiate, Angola, Ind.
Rev. William H. Kane, O.P., Dominican House of Studies, River Forest, Ill.
Prof. James J. Kearney, Loyola University, Chicago, Ill.
Rev. James Kelly, Seton Hall College, South Orange, N. J.
Rev. Joseph P. Kelly, S.J., Weston College, Weston, Mass.
Rev. Linus A. Lilly, S.J., St. Louis University, St. Louis, Mo.
Rev. Thomas V. Liske, Quigley Preparatory Seminary, Chicago, Ill.
Rev. Bernard P. Mangan, St. Mary's College, Winona, Minn.
Rev. Joseph E. McManus, S.J., Weston College, Weston, Mass.
Dr. Harry McNeill, Fordham University, New York City.
Mother Eleanor Regan, R.S.C.S., Duchesne College, Omaha, Nebr.
Rev. P. P. Murray, O. Carm., 6428 Dante Ave., Chicago, Ill.
Rev. William F. Obering, S.J., Spring Hill College, Spring Hill, Ala.
Miss Marie B. Rochford, 5838 Washington Blvd., Chicago, Ill.
Rev. George A. Shea, Our Lady of the Elms College, Chicopee, Mass.
Rev. James E. Sherman, St. Gregory Seminary, Cincinnati, Ohio.
Sister Mary Clare, 1230 West Market St., Akron, Ohio.
Sister Thomas Aquinas, Rosary College, River Forest, Ill.
Rev. John H. Styka, Seton Hill College, Greensburg, Penna.
Miss Elizabeth B. Sweeney, 1312 Mass. Ave., N. W., Washington, D. C.
Rev. John J. Vogel, Mary Manse College, Toledo, Ohio.

STUDENT

Rev. M. M. Balaguer, S.J., Campion Hall, Oxford, England.
Rev. Augustine Bogdanski, P.S.M., Marquette University, Milwaukee, Wis.
Brother Joachim V. Benson, M.S.SS.T., The Catholic University of America, Washington, D. C.
Brother Benignus Gerrity, The Catholic University of America, Washington, D. C.
Miss Eileen M. Doherty, Loyola University, Chicago, Ill.
Mr. David Host, Marquette University, Milwaukee, Wis.
Miss Marie Kniewel, Marquette University, Milwaukee, Wis.
Rev. Alfred Kurtin, The Catholic University of America, Washington, D. C.

Miss Natalie Lincoln, The Catholic University of America, Washington, D. C.
Mr. Theodore F. Lownik, DePaul University, Chicago, Ill.
Rev. Henry A. Lucks, C.PP.S., The Catholic University of America, Washington, D. C.
Rev. Edward M. O'Connor, St. Ambrose College, Davenport, Iowa.
Rev. Clement M. O'Donnell, O.M.C., St. Anthony-on-Hudson, Rensselaer, N. Y.
Miss Miriam T. Rooney, The Catholic University of America, Washington, D. C.
Mr. Wendell Shay, The Catholic University of America, Washington, D. C.
Sister Inez Eucharia, 226 West Market St., Newark, N. J.
Rev. Paul Tanner, Marquette University, Milwaukee, Wis.
Miss Clementine E. Wien, Marquette University, Milwaukee, Wis.

The Council, after considerable discussion, decided to appoint as Editors of *The New Scholasticism* for the coming year the following members:

Edward A. Pace Francis Augustine Walsh John K. Ryan

A second meeting of the Executive Council took place on Tuesday, December 31, 1935, in the Terrace Dining Room, Hotel Cleveland, at 12:30 p. m. The following were present:

John O. Riedl James H. Ryan
John J. Toohey Francis E. McMahon
James A. McWilliams Charles A. Hart
Sister Jeanne Marie Bonnett

Professor Louis J. A. Mercier had spoken to the Secretary and asked to be excused as he had to preside as President of another association meeting on that day.

The chief business of the meeting was the consideration of the general subject for the Twelfth Annual Meeting of the Association.

The Secretary presented invitations from the University of Notre Dame, Marquette University, and Loyola University to hold the next meeting at these respective institutions. The Council decided that the meeting should be held either in Chicago or New York, and left the ultimate decision in the hands of the Secretary. The latter decided that the meeting should be held in Chicago, upon advice from a representative of Fordham University that the meeting of the Association in 1937 in New York would be more desirable.

The dates of the meeting were fixed as Tuesday and Wednesday, December 29 and 30, 1936.

After considerable discussion of various themes, the general subject chosen was that of "Christian Philosophy and the Social Sciences," which was to be sub-divided as follows: (a) "Can There Be a Christian Philosophy?" and (b) "Can Neo-Scholastic Philosophy Provide a Basis for Modern Social Sciences?" Three aspects of the former theme are to be discussed in papers at the first morning session and three aspects of the latter subject at the second morning session.

The Council authorized the President to appoint six Standing Committees in the following fields, the first named being chairman and serving for three years, the second named to serve for two years, and the third for one year:

(a) *Ethics and Philosophy of Society*—
George H. Mahowald, Charles C. Miltner, Avitus E. Lyons.

(b) *Metaphysics*—
George Bull, John F. McCormick, William J. O'Meara.

(c) *History of Philosophy*—
Anton C. Pegis, Gerald B. Phelan, Philip S. Moore.

(d) *Psychology*—
Thomas V. Moore, W. G. Summers, Joseph A. Schabert.

(e) *Philosophy of Law and Government*—
Brendan F. Brown, Linus A. Lilly, Mortimer J. Adler.

(f) *Logic and Epistemology*—
Leonard H. Otting, Virgil Michel, Edward F. Murphy.

These committees were empowered to conduct the various round table discussions at the Annual Meetings, appointing the leaders and the questions to be discussed. It was decided that the above six fields should be regularly represented at each meeting. Members attending the various Round Tables are to elect a successor to the retiring committeeman each year.

The meeting adjourned at 2:15 p. m.

CHARLES A. HART,
Secretary.

LIST OF MEMBERS

(December 1, 1935)

Life Members

Cantwell, Most Rev. John J., 710 Pet. Sec. Bldg., Los Angeles, Calif.
Hayes, His Eminence Patrick Cardinal, 452 Madison Ave., New York City.
Lilly, Mr. Joseph T., 30 Plaza St., Brooklyn, N. Y.
McClean, Right Rev. Peter H., 359 Washington Ave., Bridgeport, Conn.
McGavick, Most Rev. Alexander J., 1419 Cass Ave., LaCrosse, Wis.
McNicholas, Most Rev. John T., 5418 Moeller Ave., Norwood, Ohio.
Murray, Most Rev. John G., 226 Summit Ave., St. Paul, Minn.
O'Connell, His Eminence William Cardinal, 2101 Commonwealth Ave., Brighton, Mass.
Schrembs, Most Rev. Joseph, 18401 Shaker Blvd., Shaker Heights, Cleveland, Ohio.
Tracy, Rev. Joseph V., 321 Market St., Brighton, Mass.
Turner, Most Rev. William, 1035 Delaware Ave., Buffalo, N. Y.

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Albertus Magnus College, New Haven, Conn.
Basselin Foundation, The, The Catholic University of America, Washington, D. C.
Boston College, Chestnut Hill, Mass.
Canisius College, Buffalo, N. Y.
Catholic Foreign Mission Society, The, Maryknoll, N. Y.
Catholic University of America, The, Washington, D. C.
Clarke College, Dubuque, Iowa.
College Misericordia, Dallas, Penna.
College of Mt. St. Joseph-on-the-Ohio, Mt. St. Joseph, Ohio.
College of Mt. St. Vincent, Mt. St. Vincent-on-Hudson, N. Y.
College of New Rochelle, New Rochelle, N. Y.
College of Notre Dame of Maryland, Baltimore, Md.
College of St. Albert the Great, Oakland, Calif.
College of St. Elizabeth, Convent Station, N. J.
College of St. Francis, Joliet, Ill.
College of St. Teresa, Winona, Minn.
College of St. Thomas, St. Paul, Minn.
College of the Holy Names, Oakland, Calif.
College of the Sacred Heart, Menlo Park, Calif.
College of the Sacred Heart, Manhattanville, N. Y.
Columbia College, Dubuque, Iowa.
Creighton University, Omaha, Nebr.
DePaul University, Chicago, Ill.
Dominican College, San Rafael, Calif.

Dominican House of Studies, Washington, D. C.
Duns Scotus College, Detroit, Mich.
Duquesne University, Pittsburgh, Penna.
D'Youville College, Buffalo, N. Y.
Fontbonne College, St. Louis, Mo.
Fordham University, New York City.
Franciscan Philosophical Clericate, The, Butler, N. J.
Georgetown University, Washington, D. C.
Georgetown Visitation Convent, Washington, D. C.
Georgian Court College, Lakewood, N. J.
Good Counsel College, White Plains, N. Y.
Holy Ghost Fathers, Ferndale, Norwalk, Conn.
Kenrick Seminary, Webster Groves, Mo.
Loyola University, New Orleans, La.
Loyola University at Los Angeles, Calif.
Manhattan College, New York City.
Maryville College of the Sacred Heart, St. Louis, Mo.
Marywood College, Scranton, Penna.
Mercyhurst College, Erie, Penn.
Mt. Mary College, Milwaukee, Wis.
Mt. St. Joseph College, Philadelphia, Penna.
Mt. St. Mary Seminary, Norwood, Ohio.
Mt. St. Mary's College, Los Angeles, Calif.
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Mt. St. Scholastica College, Atchison, Kans.
Mundelein College, Chicago, Ill.
Nazareth College, Louisville, Ky.
Nazareth College, Rochester, N. Y.
Niagara University, Niagara University P. O., N. Y.
Our Lady of the Elms College, Chicopee, Mass.
Our Lady of the Lake College, San Antonio, Texas.
Our Sunday Visitor, Huntington, Ind.
Redemptorist Fathers Seminary, Oconomowoc, Wis.
Regis College, Weston, Mass.
Rosary College, River Forest, Ill.
Rosemont College, Rosemont, Penna.
Sacred Heart Seminary, Detroit, Mich.
St. Alphonsus Seminary, Woodstock, Ontario, Can.
St. Benedict's College, Atchison, Kans.
St. Bernard's Seminary, Rochester, N. Y.
St. Bonaventure's College, St. Bonaventure, N. Y.
St. Charles Seminary, Carthagena, Ohio.
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St. Francis College, Loretta, Penna.
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St. John's College, Brooklyn, N. Y.
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St. Joseph's College for Women, Brooklyn, N. Y.

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University of Dayton, Dayton, Ohio.
University of Detroit, Detroit, Mich.
University of Notre Dame, Notre Dame, Ind.
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Cote, Rev. A. B., Providence College, Providence, R. I.
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Downing, Rev. Francis X., Institute of Philosophy, Huntington, L. I., N. Y.
Downing, Prof. P. J., Fordham University, New York City.
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Doyle, Rev. Patrick F., College of Our Lady of the Elms, Chicopee, Mass.
Driscoll, Rev. Alexius M., Dominican House of Studies, River Forest, Ill.
Dubray, Very Rev. Charles A., Maust College, Washington, D. C.
Duce, Rev. Hugh M., Pres., Loyola University, Los Angeles, Calif.
Dwyer, Mr. Francis X., Harvard Law Library, Cambridge, Mass.
Engelen, Rev. William J., St. Louis University, St. Louis, Mo.
England, Mr. Edward L., 741 South Scoville Ave., Oak Park, Ill.
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Fitzpatrick, Rev. John F., Sacred Heart Seminary, Detroit, Mich.
Fletcher, Rev. Albert L., St. John's Seminary, Little Rock, Ark.
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Frierson, Rev. Leo, Belmont Abbey, Belmont, N. C.
Fritz, Rev. Henry, Trinity College, Sioux City, Iowa.
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Galliher, Rev. Daniel M., Providence College, Providence, R. I.
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Grady, Rev. Joseph E., Aquinas Institute, Rochester, N. Y.

Gregory, Rev. Martin M., St. Mary's Seminary, Perryville, Mo.
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Keelan, Rev. Vincent L., Woodstock College, Woodstock, Md.
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